

حمل الآن

مجانا وحصريا

امتحانات رقم (1)

الترم الثاني



Model Exam 1

Total mark

24

Answer the following questions :

Question 1 6 marks

A Put (✓) or (✗) :

1. The simple harmonic motion is considered the simplest form of oscillatory motion. ()
2. Vegetative reproduction is a type of sexual reproduction. ()

B 1. Give one example of :

- a. Longitudinal waves.
- b. Fruits have single seed.

2. Give reasons for the following :

- a. Ultrasonic waves are used in sterilizing food.
- b. The periodic time decreases as the number of complete oscillation increases.

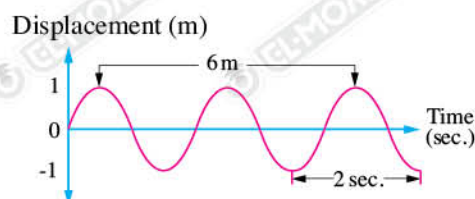
Question 2 6 marks

A Choose the correct answer :

1. The result of multiplying frequency of a vibrating body by its periodic time equals
 a. 4 b. 1 c. 0.5 d. 0.1
2. The human ear can hear sounds of frequency
 a. 50 KHz. b. 30 KHz. c. 300 Hz. d. 10 Hz.

B From the opposite figure, calculate :

1. Wavelength.
2. Periodic time.
3. Frequency.
4. Amplitude.



Question 3 6 marks

A Write the scientific term of each of the following :

1. The process of fusion of a pollen grain with an ovum.
2. The changing of light ray path when moving from a transparent medium to another transparent medium of different optical density.

B 1. Compare between each of the following :

- a. Sperm – Ovum (in term of size of them).
- b. Mechanical wave – Electromagnetic wave (in term of speed of them).

2. What is the function of ...?

- a. Vas deferens.
- b. Glass prism.


Question 4 6 marks

A Correct the underlined words :

1. The stamen consists of stigma, style and ovary.
2. The motion of tuning fork is a wave motion.

B Calculate :

1. The frequency of an emitted tone using Savart's wheel rotated with velocity of 960 cycles in two minutes, given that the number of teeth of the gear is 30 teeth.
2. The frequency of an oscillating body makes 240 complete oscillations in one minute.

Model Exam 2

Total mark
24

Answer the following questions :

Question 1 6 marks

A Correct the underlined words :

1. Light waves and sound waves are electromagnetic waves.
2. Ovary, fallopian tube, uterus and testes are components of female reproductive system.

B What happens when ...?

1. Fusion occurs between nucleus of a sperm with nucleus of an ovum.
2. The distance between the sound source and the ear increases to the double.
3. The particles of the medium vibrate along the direction of the wave propagation.
4. A pollen grain fall on a stigma of a flower.

Question 2 6 marks

A Cross out the odd word :

1. Pendulum – Tuning fork – Spring – Water waves.
2. Yellow light – Blue light – White light – Red light.

B 1. Give reasons for the following :

- a. The light ray that falls perpendicular on a glistening surface reflects on itself.
- b. Palm tree flowers are unisexual flowers.

2. What is the function of ...?

- a. Calyx of the flower.
- b. Jacuzzi.

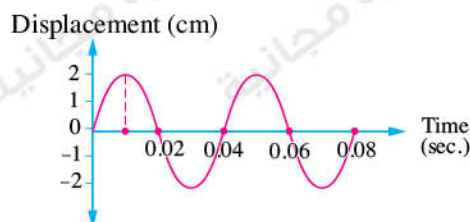
Question 3 6 marks

A Rearrange the following according to which between brackets :

1. Water – Wood – Air – Carbon dioxide gas.
(descending order according to sound velocity through each of them).
2. Urethra – Epididymis – Vas deferens – Testes.
(According to the path of sperms from its site of production).

B Calculate :

1. The wavelength of a transverse wave shown in the opposite figure, Knowing that its velocity equals 20 m/sec.
2. The absolute refractive index of diamond given that the velocity of light through it equals 1.25×10^8 m/sec., and the velocity of light through air equals 3×10^8 m/sec.

**Question 4** 6 marks**A Complete the following sentences using words between brackets :**

(transverse mechanical waves – sound pitch – electromagnetic waves – sound intensity)

1. Water waves is an example of
2. The property by which the ears can distinguish between harsh and sharp voices, is known as

B Give one example of :

1. The unisexual flowers.
2. The sounds of high pitch.
3. The spectrum light colours of highest deviation.
4. The electromagnetic waves used in radars.

Model Exam 3

Total mark

24

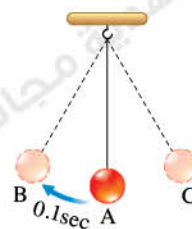
Answer the following questions :

Question 1 6 marks**A Write the scientific term of each of the following :**

1. The method of vegetative reproduction that is used to produce large numbers of plants from a small part of it.
2. The motion that regularly repeated at equal periods of time.

B 1. Study the opposite figure that shows a moving pendulum, then calculate :

- a. Periodic time.
- b. Frequency.

**2. The opposite figure shows an artificial vegetative reproduction method, mention :**

- a. The name of this method.
- b. The name of tree belongs to this method.




Question 2 6 marks

A Put (✓) or (✗) :

1. Fundamental tone's intensity is lower than harmonic tone's intensity. ()
2. There is a direct relation between angle of incidence and angle of reflection of a light ray. ()

B 1. Give reasons for the following :

- a. The midpiece of sperm contains mitochondria.
- b. We can hear sound from all direction.

2. What is meant by ...?

- a. Ultrasonic waves.
- b. Hermaphrodite flower.

Question 3 6 marks

A Complete the following sentences :

1. Transverse waves consist of and
2. Floral leaves of calyx have colour and each one of them is called

B 1. Classify the following medium according to their ability to permit light to pass through them :

- a. Clear glass.
- b. Frosted glass.
- c. Air.
- d. Human skin.

2. Classify the following sound frequencies according to their type :

- a. 1.5 KHz.
- b. 0.5 Hz.
- c. 21 KHz.
- d. 1500 Hz.

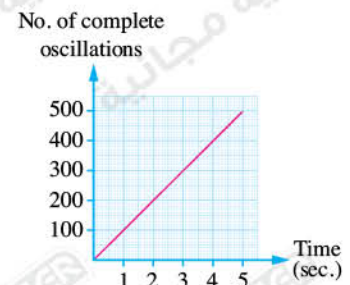
Question 4 6 marks

A Choose the correct answer :

1. The measuring unit of noise intensity is
 a. Decibel. b. Hz. c. Watt/m². d. Meter.
2. Pollination in coloured and scented flower often takes place by
 a. insects. b. man. c. water. d. air.

B The opposite graph shows the relation between the number of complete oscillations (N) made by an oscillating body and the time (T) in seconds. From the graph find :

1. The number of complete oscillations made by the oscillating body after 4 seconds.
2. The time in which the oscillating body makes 200 oscillations.
3. The frequency of the oscillating body.
4. The periodic time.



Answer the following questions :

Question 1 6 marks

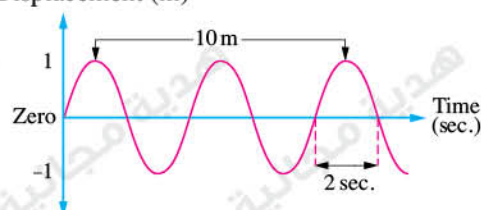
A Choose from columns (B) & (C) what suits them in column (A) :

(A) Floral whorl	(B) Consists of	(C) Function
1. Corolla 2. Androecium	A. sepals B. petals C. stamens	a. female organ of the flower. b. male organ of the flower. c. attract insects to the flower.

B From the opposite figure calculate :

1. Periodic time.
2. Frequency.
3. Wavelength.
4. Wave velocity.

Displacement (m)



Question 2 6 marks

A Put (✓) or (✗) :

1. Man's sound is harsh and rough, while woman's sound is sharp and soft. ()
2. The pendulum reaches its maximum speed when it passes at its rest position. ()

B Give one example of :

1. Oscillatory motions.
2. Fruits have many seeds.
3. Infrasonic waves.
4. Mixed pollination methods.

Question 3 6 marks

A Write the scientific term of each of the following :

1. The distance covered by light in one second.
2. The tube that extends between uterus and external genital opening.

B 1. What happens when ...?

The amplitude of a vibrating source increases 2 times. (according to the sound intensity)

2. Study the opposite figure that represents a wave, then choose the correct answer :



- a. The type of wave is a wave.
(transverse – longitudinal)
- b. The medium particles of this wave vibrate the direction of wave propagation.
(along – perpendicular to)
- c. The examples of this wave is
(sound waves – radio waves)



Question 4 6 marks

A Choose the correct answer :

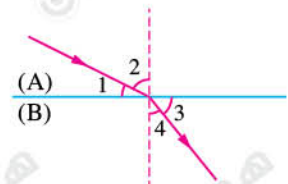
- The light ray refracts the normal when it travels from glass to air.
a. near to b. away from c. perpendicular to d. along
- The time of amplitude is equivalent to the periodic time.
a. quarter b. half c. double d. three times

B 1. What is meant by ...?

- The angle of emergence in a transparent glass prism equals 43° .
- Wave motion.

2. From the opposite figure, write the number or letter that refers to :

- The angle of refraction.
- The medium of higher optical density.



Total mark
24

Model Exam 5

Answer the following questions :

Question 1 6 marks

A Put (✓) or (✗) :

- In non-uniform reflection, the light rays reflected in one direction. ()
- The result of multiplying the frequency of an oscillating body by its periodic time equals 10. ()

B 1. Write the measuring unit of the following :

- Periodic time.
- Amplitude.

2. Give reasons for :

- The ovum is relatively large in size.
- Self pollination cannot happen in sunflowers.

Question 2 6 marks

A Choose the correct answer :

- White light analyzes into spectrum colours.
a. 3 b. 5 c. 7 d. 10
- The produced fruits by grafting belong to the type of
a. scions. b. cuts. c. stocks. d. buds.

B Give one example of :

1. Bisexual flowers.
2. Associated glands in male genital system.
3. A plant can be pollinated artificially.
4. Factors affecting sound intensity in a direct relation.

Question 3 6 marks

A Complete the following sentences :

1. Some animals such as and can hear ultrasonic waves.
2. The corolla attracts to the flower which helps in process.

B 1. What happens when ...?

- a. Light rays incident on a rough surface.
- b. Fertilization process occurs in plants according to the wall of the ovary.

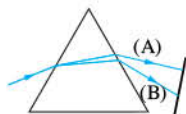
2. Calculate the wavelength of a sound wave propagating through sea water with velocity 1500 m/sec. Knowing that its frequency equals 10 KHz.

Question 4 6 marks

A Write the scientific term of each of the following :

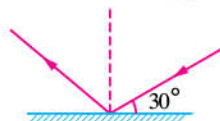
1. The returning back of light waves to the same medium on meeting a reflecting surface.
2. Short stem where the leaves are developed and modified into reproductive organs.

B Study the following figures, then answer the repaired below each of them :



(1)

Which of the following rays refers to violet light?



(2)

The reflecting angle =



(3)

The distance covered in one complete oscillation =



(4)

What does the figure represent?

Model Exam 1

1

- (A) 1. (✓) 2. (X)
 (B) 1. a. Sound waves. b. Peaches.
 2. a. Because these type of waves have high ability to kill some types of bacteria and stop the action of some viruses.
 b. Because the periodic time is inversely proportional to the number of complete oscillations done by the oscillating body at constant time.

2

- (A) 1. b 2. c
 (B) 1. Wavelength = $\frac{\text{The covered distance by the wave}}{\text{The number of complete waves}}$
 $= \frac{6}{2} = 3 \text{ m}$
 2. Periodic time = 2 sec.
 3. Frequency = $\frac{1}{\text{Periodic time}} = \frac{1}{2} = 0.5 \text{ Hz.}$
 4. Amplitude = 1 m.

3

- (A) 1. Fertilization process in a plant.
 2. Light refraction.

(B) 1. a.

P.O.C	The sperm	The ovum
The size :	It has a small size.	It has a relatively large size.

b.

P.O.C	Mechanical waves	Electromagnetic waves
The speed :	Their velocity is relatively low.	Their velocity is great ($3 \times 10^8 \text{ m/sec.}$)

2. a. It transfers sperms from testes to the urinary genital duct (urethra).
 b. It analysis the white light into seven spectrum colours.

4

- (A) 1. carpel 2. an oscillatory motion.
 (B) 1. Frequency = $\frac{\text{No. of cycles} \times \text{No. of teeth}}{\text{Time in seconds}}$
 $= \frac{960 \times 30}{2 \times 60} = 240 \text{ Hz.}$
 2. Frequency = $\frac{\text{No. of complete oscillations}}{\text{Time in seconds}}$
 $= \frac{240}{1 \times 60} = 4 \text{ Hz.}$

Model Exam 2

1

- (A) 1. infrared waves 2. vagina
 (B) 1. The zygote (fertilized ovum) will be formed that contains a nucleus with 46 chromosomes
 2. The sound intensity decreases to its quarter value.
 3. A longitudinal wave will be formed.
 4. It will germinate forming a pollen tube.

2

- (A) 1. Water waves. 2. White light.
 (B) 1. a. Because the angle of incidence and the angle of reflection are equal zero.
 b. Because its flower contain only male or female reproductive organ.
 2. a. Protection of the inner parts of the flower specially before blooming.
 b. Used to treat :
 - Sprains and cramps by using hot water.
 - Nervous tension by using cold water.

3

- (A) 1. Wood > Water > Carbon dioxide gas > Air.
 2. Tests → Epididymis → Vas deferens → Urethra.
 (B) 1. Periodic time = 0.04 sec.
 Frequency = $\frac{1}{\text{Periodic time}} = \frac{1}{0.04} = 25 \text{ Hz.}$
 Wavelength = $\frac{\text{Wave velocity}}{\text{Frequency}} = \frac{20}{25} = 0.8 \text{ m.}$
 2. Absolute refractive index of diamond
 $= \frac{\text{Velocity of light through air}}{\text{Velocity of light through diamond}}$
 $= \frac{3 \times 10^8}{1.25 \times 10^8} = 2.4$

4

- (A) 1. transverse mechanical wave. 2. sound pitch.
 (B) 1. Maize. 2. Sparrow sound.
 3. Violet light. 4. Radio waves.

Model Exam 3

1

- (A) 1. Tissue culture. 2. Periodic motion.
 (B) 1. a. Periodic time = $4 \times \text{time of an amplitude}$
 $= 4 \times 0.1 = 0.4 \text{ sec.}$
 b. Frequency = $\frac{1}{\text{Periodic time}} = \frac{1}{0.4} = 2.5 \text{ Hz.}$

2. a. Grafting by attachment.
b. Mango tree.

2

- (A) 1. (X) 2. (✓)
(B) 1. a. Because mitochondria are responsible for energy production that needed for the sperm movement.
b. Because sound travels through air as spheres of compressions and rarefactions whose center is the sound source.
2. a. It means the sound waves of frequencies higher than 20 KHz.
b. It means the flower that carries both male and female reproductive organs.

3

- (A) 1. crests - troughs
2. green - sepal.
(B) 1. a. Transparent medium.
b. Translucent medium.
c. Transparent medium.
d. Opaque medium.
2. a. Sonic waves. b. Infrasonic waves.
c. Ultrasonic waves. d. Sonic waves.

4

- (A) 1. a 2. a
(B) 1. 400 complete oscillations.
2. 2 sec.
3. Frequency = $\frac{\text{Number of complete oscillations}}{\text{Time in seconds}}$
 $= \frac{400}{4} = 100 \text{ Hz.}$
4. Periodic time = $\frac{1}{\text{Frequency}} = \frac{1}{100} = 0.01 \text{ sec.}$

Model Exam 4

1

- (A) 1. B. c 2. C. b
(B) 1. Periodic time = Time of complete wave
 $= 2 \times 2 = 4 \text{ sec.}$
2. Frequency = $\frac{1}{\text{Periodic time}} = \frac{1}{4} = 0.25 \text{ Hz.}$
3. Wavelength = $\frac{\text{The covered distance by the wave}}{\text{The number of complete waves}}$
 $= \frac{10}{2} = 5 \text{ m.}$
4. Wave velocity = Wavelength \times Frequency
 $= 5 \times 0.25 = 1.25 \text{ m/sec.}$

2

- (A) 1. (✓) 2. (✓)
(B) 1. Tuning fork vibration. 2. Pea Fruit.
3. Waves accompany the blowing of storms that precede rainfall.
4. Pollination by air.

3

- (A) 1. The light speed. 2. Vagina.
(B) 1. The sound intensity increases 4 times.
2. a. longitudinal b. along
c. sound waves.

4

- (A) 1. b 2. a
(B) 1. a. This means that the angle between the emergent light ray and the line perpendicular to the interface at the point of emergence is 43° .
b. It is the periodic motion produced as a result of vibration of medium particles at a certain moment and in a definite direction.
2. a. Number (4). b. Letter (B).

Model Exam 5

1

- (A) 1. (X) 2. (X)
(B) 1. a. Seconds. b. Meters.
2. a. Due to the storage of nutrient materials.
b. Because their anthers and stigmas are not matured at the same time.

2

- (A) 1. c 2. a
(B) 1. Tulip. 2. Seminal vesicle.
3. Palm tree. 4. Square of the amplitude.

3

- (A) 1. dolphins – bats 2. insects – pollination
(B) 1. a. The light rays are reflected in many directions.
b. It will develop to become the outer coat of the fruit (pericarp).
2. Wavelength = $\frac{\text{Wave velocity}}{\text{Frequency}}$
 $= \frac{1500}{10 \times 1000} = 0.15 \text{ m.}$

4

- (A) 1. Light reflection. 2. Flower.
(B) 1. Ray (B). 2. 60°
3. 20 cm. 4. a sperm.

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



خطوة 1



خطوة 2
اختيار اسم
الطابعة
بتاعتك

خطوة 3
كتابة الصفحات
المراد طباعتها
نكتب رقم 4 ثم
نكتب الشرطة
دي - ثم نكتب 9

خطوة 4
اختيار نوع الورق



خطوة 5
اختيار A4



خطوة 6

حمل الآن

مجانا وحصريا

امتحانات رقم (2)

الترم الثاني





Final Examinations

of Some Governorates

2024

1

Cairo Governorate

St. Joseph Maronite Language School

Answer the following questions :

Question 1

A Complete the following sentences :

1. The mechanical waves are classified into and
2. The human ear could hear the sounds that their frequencies range between and
3. From the factors that affect the sound intensity are and
4. Fertilization, is the process of fusing of the male cell nucleus (pollen grain) with to form

B Put (✓) or (✗) :

1. The light ray refracts towards the normal when it travels from air to glass. ()
2. The amplitude is the covered distance in a complete oscillation. ()
3. The syphilis is transferred from the infected person through the sexual contact. ()

C Choose the correct word :

Noise intensity is measured by a unit called

(decibel – watt/m² – Hertz – meter)

Question 2

A Write the scientific term :

1. The tones accompanying the fundamental tone are higher in pitch and less in intensity.
2. The distance covered by light in one second.
3. The embryo is formed, feed and protected in it until its birth.
4. A floral whorl in the flower, its function is to attract insects because it is colorful and scented.

B Correct the underlined words :

1. Violet colour has the least deviation.
2. Gynoecium is the third whorl of the floral leaves and it is the male reproductive organ of the flower.
3. The angle of incidence is greater than the angle of reflection.

C Give a reason for :

Some plants can be reproduce without flowers.

Question 3

A Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Triangular prism	a. is the disturbance that propagates and transfers energy in direction of propagation.
2. The wave	b. break down stones of kidney and ureter.
3. Ultrasonic waves	c. is the cell resulting from fusion of pollen grain and an ovum nuclei.
4. The zygote	d. is used in the analysis of light.

B Complete the following relations :

- $\frac{1}{\text{Frequency}} = \dots\dots\dots$
- $\frac{\text{Wave velocity}}{\text{Frequency}} = \dots\dots\dots$
- $\frac{\text{Number of waves} \times \text{Wavelength}}{\text{Time}} = \dots\dots\dots$

C Calculate the number of gear's teeth of savart's wheel, given that the frequency of the sound produced is 300 Hz, and the wheel rotates with a rate 30 cycles / minute.

Question 4

A Choose the correct answer :

- The absolute refractive index of any material is always one.
a. less than b. more than c. equal to d. (a and b)
- The pen seems broken when it is put in a glass of water because of
a. light interference. b. light reflection.
c. light refraction. d. total internal reflection of light.
- The hormone in males is responsible for the appearance of secondary sex characters.
a. testosterone b. progesterone c. insulin d. estrogen
- The photon energy = Planck's constant \times
a. photon velocity. b. photon frequency.
c. light intensity. d. light speed.

B Compare between (Give one point for each) :

- Sonic waves and infrasonic waves.
- Transparent medium and translucent medium.
- Grafting by attachment and grafting by wedge.

C Cross out the odd word then write the relation between the rest :

Sound wave – Light wave – Radio waves – Infrared waves.



2 Cairo Governorate

Leaders Language School

Answer the following questions :

Question 1

A Choose the correct answer :

- The highest point of the particles of the medium in the transverse wave is known as
a. the crest. b. the compression. c. the rarefaction. d. the trough.
- If the distance between the center of the third compression and the center of the fifth compression on the wave propagation is 20 cm., so the wavelength of this wave is
a. 40 cm. b. 20 cm. c. 10 cm. d. 5 cm.
- The outer whorl of the flower is called
a. petal. b. calyx. c. androecium. d. corolla.
- media don't allow light to pass through.
a. Transparent b. Translucent c. Semi-transparent d. Opaque

B Write the scientific term :

- The maximum displacement achieved by the oscillating body away from its rest position.
- The angle between the reflected light ray and the normal line at the point of incidence on the reflecting surface.
- The male reproductive organ of the flower.

C Problem :

Calculate the absolute refractive index of diamond given that the velocity of light through it is 1.25×10^8 m/s knowing that the velocity of light through air is 3×10^8 m/s.

Question 2

A Complete the following sentences :

- The floral leaves of corolla are called
- The sound intensity at a point is proportional to the square of the distance between that point.
- The frequency of sonic waves ranges between Hz and Hz.
- When an oscillating body makes 600 complete cycles per a minute, its frequency equals Hz.

B Correct the underlined words :

- Estrogen hormone is responsible for the occurrence and continuity of pregnancy.
- If the angle between the incident light ray and the reflected light ray is 90° , so the angle of incidence equals 90° .
- The red color in the spectrum colours has the highest frequency.

Part 3

C Give a reason for :

Sound is a mechanical longitudinal wave.

Question 3

A Put (✓) or (✗) :

1. After fertilization, the ovary grows forming the seed. ()
2. The right ovary in the female human produces a mature (ripe) ovum every 28 days. ()
3. The quantum of energy of green light is more than the quantum of energy of yellow light. ()
4. Ultrasonic waves are used in breaking down kidney and ureter's stones. ()

B What is the organ responsible for ... ?

1. Producing sperms.
2. Producing pollen grains.
3. Receive the ovum from the ovary in human female.

C Calculate the number of gear's teeth when Savart's wheel makes 600 cycles in one minute to produce a tone of frequency 300 Hz.

Question 4

A Match :

(A)	(B)
1. It is a type of natural asexual reproduction.	a. Optical density
2. It is a type of artificial asexual reproduction.	b. Tubers
3. It is the ability of transparent media to refract light.	c. Frequency
4. It is the number of complete oscillation in one second.	d. Grafting

B What happens in the following cases ...?

1. Fusion between the male gamete and the female gamete.
2. Increasing the distance between the source of sound and the receptor to double.
(Concerning the sound intensity).
3. To the sound velocity if the frequency increases.

C Calculate the number of complete oscillations that are made by a body in 2 minutes if its frequency equals 6 Hz.



3 Cairo Governorate

East Nasr City Educational Zone

Answer the following questions :

Question 1

A Complete the following sentences :

1. In the flower, produces pollen grains.
2. is the time taken by an oscillating body to make one complete oscillation.
3. The measuring unit of noise intensity is
4. The voice of women has pitch.

B Write the importance of :

1. Corolla.
2. Testis in human male.
3. Savart's wheel.

C Calculate the frequency of a simple pendulum that makes 360 complete oscillations in one minute.

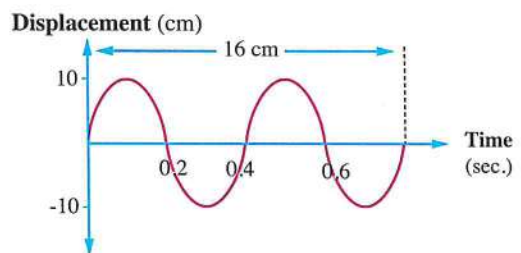
Question 2

A Write the scientific term :

1. Sound waves of frequencies less than 20 Hertz.
2. A medium doesn't allow light rays to penetrate through.
3. A new method to produce large number of plants from a small part of it.
4. The maximum displacement done by the oscillating body away from its original position.

B From opposite figure calculate :

1. Amplitude.
2. Periodic time.
3. Frequency.



C What happens when ... ?

Light ray travels from air to glass.

Question 3

A Choose the correct answer :

1. When the incident light ray reflects on itself, the angle of incidence =
 a. zero° b. 120° c. 90° d. 180°
2. The colour light in the spectrum colours has the highest deviation.
 a. white b. red c. violet d. yellow

Part 3

3. A sound wave travels in air with velocity 330 m/s and has a wavelength of 0.1 m, its frequency is
- a. 330 Hz. b. 3300 Hz. c. 33 KHz. d. 330 KHz.
4. The floral whorl, which is absent in the female flower is
- a. calyx. b. corolla. c. gynoecium. d. androecium.

B Put (✓) or (✗) :

1. Harmonic tones that accompany the fundamental tone are lower in pitch. ()
2. The fish is seen higher than its real position in the fish tank. ()
3. After fertilization, the ovary develops to become a flower. ()

C Give a reason for :

The absolute refractive index of any transparent medium is always greater than one.

Question 4

A Choose the odd word out :

1. Stigma – Stamen – Style – Ovary.
2. Amplitude – Wind direction – Frequency – Surface area.
3. Sound waves – Light waves – Radio waves – Infrared waves.
4. Pendulum motion – Spring motion – Rotary bee motion – Stretched string motion.

B Correct the underlined words :

1. Speed of sound in water is slower than in air.
2. Sweet potato is considered as a stem.
3. Human ear can distinguish sounds of frequencies between 10 : 20 Hz.

C Give one difference between :

Sperm – ovum (size of them).

4 Cairo Governorate

El Nozha Education Zone

Answer the following questions :

Question 1

A Complete the following sentences :

1. The measuring unit of sound intensity is, while the measuring unit of noise intensity is
2. The crest in the wave is equivalent to the in the longitudinal wave.
3. After fertilization in plants, the ovary changes into while the ovule changes into
4. The voice of lion is pitch while the voice of sparrow is pitch.



B Cross out the odd word :

1. Red – Orange – Yellow – Black.
2. Pendulum motion – Tuning fork motion – Spring motion – Water wave.
3. Calyx – Corolla – Stamen – Testes.

C Mention one use of ultrasonic waves in the medical field.

Question 2

A Choose the correct answer :

1. All of the following are organs of male reproductive system, except
a. vas deferens. b. uterus. c. testes. d. penis.
2. The ability of the transparent medium to refract the light is called the
of the medium.
a. refractive index b. density c. optical density d. viscosity
3. Pollination in colored and scented flowers often takes place by
a. insects. b. man. c. water. d. air.
4. The energy of photon = Planck's constant \times
a. frequency. b. amplitudes. c. wavelength. d. speed.

B Rearrange this word according to which between brackets :

1. Corolla – Stamen – Calyx – Carpel. (from outer to inner in flower)
2. Vas deferens – Urethra – Testes – Epididymis.
(according the path of sperms from its production until it exit the body)
3. Water – Wood – Air – Carbon dioxide gas. (descendingly according to sound velocity)

C Problem :

Calculate the number of gear's teeth, if the wheel rotates with speed 120 cycles / minute and the frequency in Savart's wheel is 100 Hz.

Question 3

A Write the scientific term of the following :

1. Short stem where leaves developed and modified into reproductive organs.
2. It is the process of transfer of pollen grains from the anthers of a flower to stigmas of the same flower.
3. A property by which the ear can distinguish between harsh and sharp voices.
4. Two tubes of funnel shaped opening provided with finger like projection and lined with cilia.

B Mention one example for :

1. Fruit has single seed.
2. Mechanical waves.
3. Smooth reflecting surfaces.

C What happens when ... ?

A light ray falls perpendicular on a reflecting surface.

Question **4**

A Put (✓) or (✗) :

1. The anther of air pollinated flowers are feathery like and sticky. ()
2. In uniform reflection, the light rays are reflected directly in one direction. ()
3. Sound intensity decreases when it touches a resonance box. ()
4. Each ovary produces only one ovum every 28 days in exchange with other ovary. ()

B Give reasons for the following :

1. Ultrasonic wave are used in sterilizing the food.
2. The petals of corolla are colorful and scented.
3. Seeing lightning before hearing thunder.

C Correct the underlined word :

In human, the fertilized egg is implanted in the lining of cervix.

5 Cairo Governorate

Abdeen Educational Administration

Answer the following questions :

Question **1**

A Complete the following sentences :

1. The transverse waves are used are formed from and
2. The ultrasonic waves are used in and
3. is the whorl that has green leaves but has colorful leaves.
4. The male organ in plant but the female organ in plant

B Write the scientific term :

1. Two glands exist inside scrotal sac in male.
2. The angle between the reflected light ray and the normal.
3. The distance between centers of two successive compressions or two successive rarefactions.

C Mention one example of an opaque medium.

Question **2**

A Put (✓) or (✗) :

1. The motion of tuning fork is considered as an oscillating periodic motion. ()
2. The red colour light is the first colour to prism's base and lowest wavelength. ()
3. The typical flower has four floral whorls. ()
4. Sexual reproduction occurs by one individual only. ()



B Choose the correct answer :

- The floral whorl that not exists in the female flower,
a. calyx. b. corolla. c. androecium. d. ovum.
- The measurement unit of the Time,
a. second. b. Hertz. c. kilo. d. meter.
- The number of complete oscillations at one second is known as,
a. frequency. b. periodic time. c. amplitude. d. speed.

C Calculate the periodic time of oscillating body with 4 Hertz frequency.

Question 3

A Cross the odd word :

- Nanometer – Hertz – Megahertz – Gigahertz.
- Uterus – Ovary – Testis – Vagina.
- Head – Midpiece – Epididymis.
- Guitar – Violin – Drill – Piano.

B Correct the underlined words :

- Mixed pollination is the transporting of pollen grains from anthers to stigmas of the same flower.
- Ovum grows and forms a fruit.
- Mechanical waves is faster than electromagnetic waves.

C What happens when ?

Increasing the thickness of transparent media (according to passing light).

Question 4

A Match :

(A)	(B)
1. Hot water in jacuzzi	a. forms a zygote.
2. Fusion of a pollen grain with an ovum	b. treatment of cramps.
3. Passing light from glass to air	c. grows and forms a pollen tube.
4. Falling of a pollen grain on a stigma	d. refracts away the normal.

B Give reasons for :

- We see the sunlight but we cannot hear the sound of Sun.
- Ultrasonic waves are used in milk sterilization.
- Plant makes pollination by insects produces rough pollen grains.

C What is meant by ... ?

Amplitude.

Answer the following questions :

Question 1

A Choose the correct answer :

- If the frequency of an oscillating body is 5 Hz, the periodic time is
a. 5 sec. b. $\frac{1}{5}$ sec. c. 1 sec. d. 5 m.
- Sound of frequency 300 Hz is than sound of frequency 200 Hz.
a. stronger b. sharper c. harsher d. weaker
- The angle of incidence of light is its angle of reflection.
a. larger than b. equal to c. smaller then d. double to
- hormone is responsible for the continuity of pregnancy.
a. Estrogen b. Testosterone c. Progestrone d. Thyroxine

B Cross out the odd word :

- Stigma – Stamen – Style – Ovary.
- Light waves – Infrared waves – Radio waves – Sound waves.
- Fallopian tubes – Vas deferens – Testes – Penis.

C Mention only one example for the following :

- Mechanical waves.
- Natural asexual reproduction in plants.

Question 2

A Complete the following statements :

(an alkaline – a neutral – sound pitch – self pollination – ultrasonic waves
– sound velocity – infrasonic waves – mixed pollination)

- used for detecting the sex of the embryo.
- The distance covered by sound waves in one second is called
- The transfer of pollen grains from the anthers of a flower to the stigmas of the same flower is known as
- The seminal fluid is in nature.

B Put (✓) or (✗) :

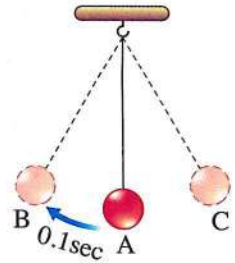
- Light refraction is the rebounding of light rays in the same medium. ()
- The intensity of sound is directly proportional to the square of the amplitude. ()
- The human ear can hear sounds of frequencies ranging from 20 Hz to 20 KHz. ()



C Answer the following :

In the opposite figure, when the ball of pendulum moves from (B) to (C) it makes a displacement of (2 m), from the figure find :

1. The amplitude.
2. The periodic time.



Question 3

A Correct the underlined words :

1. Transparent media allow a part of light to pass through them.
2. The absolute refractive index of any transparent material is always equal to one.
3. The measuring unit of sound intensity is m/sec.
4. A body of frequency 200 Hz makes a complete oscillation in 200 seconds.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Ovary	a. Planck's constant \times photon frequency.
2. Photon energy	b. half of the genetic material.
3. The male gamete contains	c. a peeled sized gland located inside the abdominal cavity.
	d. a hollow pear-shaped organ located inside pelvic cavity.

C Savart's wheel rotates with rate of 300 cycle per minute, a sound frequency 600 Hz is produced when an elastic plate touches the teeth of one gear.

Calculate the number of teeth of the gear.

Question 4

A Write the scientific term :

1. The distance between two successive crests or two successive troughs.
2. A short stem whose leaves are modified to form the reproductive organs in plants.
3. The number of complete oscillations produced by the oscillating body in one second.
4. The cell resulting from the fusion of a pollen grain and an ovum nuclei.

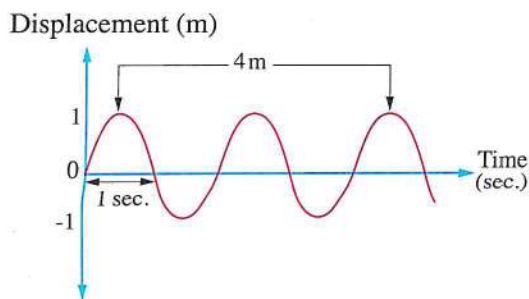
B Give reasons for :

1. The light ray that falls perpendicular on a glistening surface reflects on itself.
2. The petals of corolla are colorful and scented.
3. The guardian dog puts its ear on the ground when it sleeps at night.

Part 3

C Complete the following figure :

1. Wavelength =
2. Periodic time =
3. Wave velocity =
4. Multiplying periodic time and frequency equals



7 Giza Governorate

6 October Educational Zone

Answer the following questions :

Question 1

A Choose the correct answer :

1. The measuring unit of sound intensity is
a. decibel. b. Hertz. c. watt/m². d. meter.
2. White light analysis into spectrum colours.
a. 3 b. 5 c. 7 d. 9
3. All of the following plants reproduce sexually, except
a. bean plant. b. pea plant. c. potato plant. d. olive plant.
4. Sound of frequency 200 Hz is than the sound of frequency 100 Hz.
a. sharper b. stronger c. harsher d. weaker

B Correct the underlined words :

1. The speed of sound is more than the speed of light.
2. Male sex hormone is estrogen.
3. The green leaves in flower are called corolla.

C Give one example for each of the following :

1. Transverse waves.
2. A tuber.

Question 2

A Cross out the odd word :

1. Swing motion – Tuning fork motion – Pendulum motion – Rotary bee motion.
2. Ovary – Testis – Fallopian tube – Vagina.
3. Glass – Water – Air – Wood.
4. Violin – Drill – Piano – Reed pipe.



B Put (✓) or (✗) :

1. Palm trees are pollinated by insects. ()
2. The temperature of testes is 4 C° above body temperature. ()
3. Amplitude equals quarter of a complete oscillation. ()

C Solve the following :

Calculate the frequency the tone that produced from Savart's wheel rotates by velocity 960 rotations in two minutes and number of gears teeth equal 30 teeth.

Question 3

A Complete the following :

1. Radio waves are waves that can travel through
2. There are two types of reproduction in plants which are and
3. The reflection of light is classified into and reflection.
4. The frequency of sonic waves range between to Hz.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. The translucent medium	a. disturbance that propagate and transfer energy.
2. The zygote	b. the property of sound strong or weak.
3. The sound intensity	c. the cell results from the fusion between male and female cells.
	d. medium that permits part of light to pass through.

C Give a reason for :

We see lightning before hearing thunder.

Question 4

A Write the scientific term :

1. A tool used in the analysis of light.
2. The area of high density and pressure in the longitudinal waves.
3. The time taken to make one complete oscillation.
4. The flower that has anther and stigma together.

B Mention one function (use / importance) of the following :

1. Calyx in flower
2. Jacuzzi
3. Ultrasonic waves

C Complete : Photon energy is directly proportional to photon

Answer the following questions :

Question 1

A Write the scientific term :

1. The periodic motion made by the oscillating body around its rest point.
2. The ability of the transparent medium to refract light.
3. The outer whorl of floral leaves and protects the internal parts of flower before blooming.
4. Sound waves of frequencies less than 20 Hertz.

B Correct the underlined words :

1. Sweet potato is considered as a stem.
2. In regular reflection, the angle of incidence is more than the angle of reflection.
3. As the frequency decreases, the periodic time decreases.

C Calculate the number of teeth of Savarts wheel. Given that the frequency of sound produced is 100 Hz and the wheel rotates with 30 cycles/min.

Question 2

A Choose the correct answer :

1. The colour light in the spectrum colours has the highest deviation.
a. white b. red c. violet d. yellow
2. When the incident light ray reflects on itself the angle of incidence equals
a. 90° b. 0° c. 120° d. 180°
3. Complete oscillation has amplitudes.
a. 8 b. 12 c. 1 d. 4
4. Pollination in coloured flowers takes place by
a. insects. b. man. c. water. d. air.

B Choose the odd word out :

1. Air – Glass – Wood – Water.
2. Ovary – Uterus – Vagina – Prostate gland.
3. Pendulum motion – Spring motion – Rotatory bee motion – String motion.

C Write the measuring unit for :

1. Amplitude.
2. Sound intensity.



Question 3

A Put (✓) or (✗) :

1. The absolute refractive index of any medium is always, less than one. ()
2. The sound intensity decreases when the area of vibrating surface decreases. ()
3. The simple harmonic motion is considered as the simplest form of oscillatory motion. ()
4. Palm trees are pollinated by insects. ()

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Energy	a. is a frequency of infrasonic wave.
2. 50 Hertz	b. secretes hormone of progesterone.
3. Ovary	c. is a frequency of sonic wave.
	d. transfers among particles of medium by waves.

C Give an example for :

1. A mechanical transverse wave.
2. A high-pitched sound.

Question 4

A Complete the following sentences :

1. Waves are classified according to the ability of propagation into waves and waves.
2. After fertilization the ovary grows forming the while the ovule develops to become a
3. Sound pitch is a property by which the ear can distinguish between and
4. The crest in the wave is equivalent to the in the longitudinal wave.

B Mention one function for each of the following :

1. Glass prism.
2. Testes.
3. Ultrasonic waves.

C Give a reasons for : We see lightning before hearing thunder.

9 Alexandria Governorate

Borg El-Arab Educational Zone

Answer the following questions :

Question 1

A Complete the following sentences :

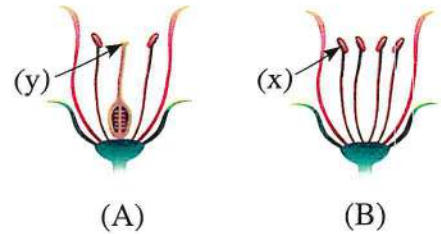
1. When you look at a coin in a glass of water, its position appears to be lower than the position.
2. The bisexual flower contains and

Part 3

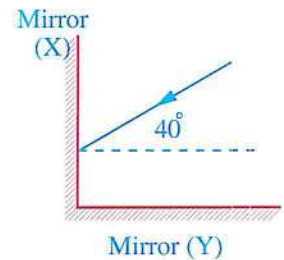
- The glass prism is used to analyse the light into colours.
- The measuring unit of noise intensity is , while the measuring unit of sound intensity is

B From the opposite figure :

- What is the name of parts (x) and (y)
- Mention the function of part (x)
- What is the sex of flowers (A) and (B)



C From the opposite figure, the angle of reflection of ray on mirror (Y) is



Question 2

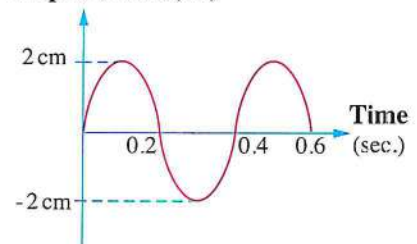
A Correct the underlined words :

- The light travels in curved lines.
- Olive fruit is a multi-seed fruit.
- In pollination by water the flower has feathery like and sticky sigma.
- The movement of the clock pendulum is an example of wave motion.

B From the opposite figure choose the correct answer :

- The periodic time =
(0.2 sec – 0.4 sec – 0.6 sec – 0.4 m)
- Frequency =
(0.2 sec – 0.4 Hz – 2.5 cycle/sec – 0.4 m)
- The amplitude =
(0.2 sec – 0.4 sec – 2 cm – 0.4 cm)

Displacement (cm)



C Compare between :

Sonic waves and ultrasonic waves (Concerning frequencies and hearing by man).

Question 3

A Write the scientific term :

- The time taken by the oscillating body to make one complete oscillation.
- The outer whole of floral leaves which consists of a group of green leaves.
- The highest point in the transverse wave.
- The change of light ray path when it travels from a transparent medium to another transparent medium of different optical density.



B Put (✓) or (✗) :

1. The pollen grains of the air pollinated flowers are sticky and have coarse surfaces. ()
2. If the angle between the incident light ray and the reflecting surface is 40° so the angle of reflection equals 40° according to the first law of light reflection. ()
3. If the speed of sound wave through air = 340 m/sec. and the frequency of a vibrating body = 170 Hz, so the wavelength = 2metres. ()

C Calculate the absolute refractive index of glass if the velocity of light in glass is 2×10^8 m/sec. knowing that the velocity of light through air is 3×10^8 m/sec.

Question 4

A Choose the correct answer :

1. The tuber is a root like
a. sweet potatoes. b. potatoes. c. grapes. d. roses.
2. The anther in plants has chambers containing pollen grains.
a. 3 b. 2 c. 4 d. 5
3. The result of multiplying the frequency of an oscillating body by its periodic time equals
a. $\frac{1}{4}$ b. 2 c. $\frac{1}{2}$ d. 1
4. The right ovary produces a ripe ovum every days
a. 28 b. 56 c. 23 d. 46

B What happens ... ?

1. To the ovary and ovule after fertilization.
2. When the distance between the light source and a surface is doubled (concerning the light intensity).
3. When you put a ringing mobile phone on a resonance box (concerning the sound intensity).

C Complete the following statements :

After redrawing them in your answer sheet,
then complete the following statements

1. In figure (1) The angle of reflection =
2. In figure (2) The angle of incidence =

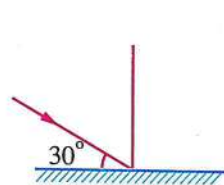


Fig. (1)

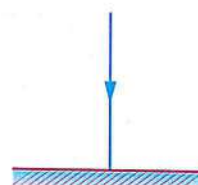


Fig. (2)

10 Alexandria Governorate

East Educational Zone

Question 1

1 Complete the following statements :

1. The vibration of the tuning fork represents movement.
2. The velocity of sound waves in solids its velocity in liquid substances.

Part 3

- is the organ that responsible for sexual reproduction in floral plants.
- is a pear-shaped hollow organ found in the pelvic cavity of a female's body.

B Write the scientific term of each of the following :

- It is the maximum displacement done by the oscillatory body away from its original position.
- It is an external factor which affects the eye causing the sense of vision.
- The time period between the infection and the starting of the symptoms of a disease.

C The wave motion is :

The disturbance that and energy in the direction of propagation.

Question 2

A Choose the correct answer :

- The complete oscillation includes displacements.
a. one b. two c. $\frac{1}{2}$ d. four
- The voice of Adam differs from that of Sara because they are different in
a. age. b. intensity. c. pitch. d. kind.
- If the frequency of an oscillating body is 5 Hz, then its periodic time equals
a. 50 sec. b. 5 sec. c. $\frac{1}{5}$ sec. d. $\frac{5}{1}$ sec.
- is the green whorl that surrounds the flower.
a. Calyx b. Corolla c. Stem d. Androecium

B Put (✓) or (✗) :

- The trough is the highest point of the particles of the medium in the transverse wave. ()
- The sharp tones have high frequency. ()
- In pollination, pollen grains must flow from one plant to another. ()

C Explain why the olive fruit contains one seed while the pea fruit contains several seeds.

Question 3

A Complete the following from between brackets :

- The movement of a swing is known as motion. (oscillatory – wave)
- Jacuzzi is a tub where water moves in the form of waves. (circular – longitudinal)
- Light propagates through transparent media in lines. (straight – curved)
- The pollen grain is responsible for transferring the genetic material to the new generation of the plant. (male – female)



B Correct what is underlined for each statement to give the right scientific fact :

1. The frequency of the oscillating body is measured by a unit m/s².
2. The transparent medium is the medium that doesn't permit light to pass through.
3. All flowers must have both male and female sexual reproduction organs.

C Compare between :

Compare between translucent and opaque media (Definition – Examples)

Question 4

A Choose out the odd word :

1. Water waves – Sound waves – Radio waves.
2. Red – Green – Black.
3. Water – Air – Wood.
4. Grafting – Cutting – Rhizomes.

B Give reasons for the following :

1. Light waves are electromagnetic waves.
2. Reproduction process is important to mankind.
3. Some flowers have a feathery like and sticky stigmas

C Complete the following :

..... ligation surgically is considered as a mean of birth control.

11 Qalyoubia Governorate

Banha Educational Zone

Question 1

A Choose the correct answer :

1. If the distance between the center of the third compression and that of the fifth compression is 20 cm, the wavelength of this wave is cm.
a. 40 b. 20 c. 10 d. 5
2. Sound of frequency 50 Hz is than sound of frequency 100 Hz.
a. sharper b. stronger c. harsher d. weaker
3. The produced fruit by grafting belongs to the type of the
a. scion. b. cut. c. stock. d. bud.
4. The right ovary in the female human produces one ripe ovum every days.
a. 24 b. 28 c. 34 d. 56

B What is the number indicating each of the following :

1. Velocity of sound wave in water.
2. Angle of reflection when a light ray falls perpendicular on a reflecting surface.
3. Floral whorls in the female flower.

Part 3

C Mention uses (importances) of :

Ultrasonic wave in industrial field.

Question 2

A Write the scientific term :

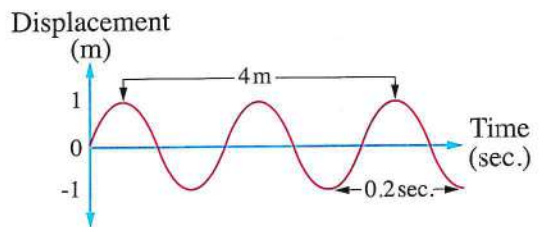
1. Half of the vertical distance between two successive crest and trough.
2. Tool is used in the analysis of white light.
3. Sound waves their frequency lower than 20 Hz.
4. A group of fine convoluted tubes connected to the testes.

B Mention an example for :

1. Mechanical longitudinal wave.
2. Factor affects the sound intensity directly.
3. Plant reproduces by tuber from root.

C From the opposite figure, find :

1. Wavelength
2. Frequency
3. Wave velocity



Question 3

A Complete the following sentences :

1. The trough in the wave is equivalent to the in the longitudinal wave.
2. Harmonic tones are lower in and higher in than fundamental tones.
3. and glands are from glands associated with the male genital system.
4. Oscillatory motion and motion are two forms of motion.

B Cross out the odd word :

1. 10^3 Hertz – 10^0 KiloHertz – 10^{-3} Megahertz – 10^{-5} Gigahertz.
2. Angle of incidence – Angle of reflection – Reflecting surface – Ovary.
3. Fallopian tube – Scrotum – Uterus – Vagina.

C Compare between the angle of incidence and the angle of refraction according to the value :

When the light travels from air to water.

Question 4

A Correct the underlined words :

1. A complete oscillation consists of two amplitudes.
2. The red photon has highest energy in spectrum colours.



3. If the angle between incident light ray and reflecting surface = 30° , so angle between incident light ray and reflected light ray = 20° .
4. Fertilization occurs when ovum is formed.

B Give reasons for each of the following :

1. Human cannot hear all sounds produced by dolphins.
2. Auto pollination can't be happened in sunflower.
3. Seeing lightning before hearing thunder.

C Arrange the floral whorls, from outside to inside.

(corolla – gynoecium – androecium – calyx)

12 Sharkia Governorate

Science Inspectorate

Question 1

1 Complete the following statements :

1. The complete oscillation includes successive maximum displacements, each one is called
2. The hormone in male and hormone in females are responsible for the appearance of secondary sexual characters.
3. Voice of women has pitch, while voice of men has pitch.
4. The is the first whorl of the floral leaves, while is the third whorl of the floral leaves.

B Cross out the odd word :

1. Sound wave – Light wave – Radio wave – Infrared wave.
2. Yellow – Blue – White – Violet.
3. Stigma – Stamen – Style – Ovary.

C A Savart's wheel rotates with a rate of 300 cycles in a half minute, as sound of frequency 600 Hz is produced when an elastic plate touches the teeth of one gear, calculate the number of teeth of that gear.

Question 2

A Choose the correct answer :

1. If the frequency of an oscillating body is 8 Hz, the periodic time is
a. 8 sec. b. $\frac{1}{8}$ sec. c. 1 sec. d. 2 m.
2. The floral whorl which is absent (not found) in the male flower is the
a. calyx. b. corolla. c. androecium. d. gynoecium.
3. All the following are factors affecting sound intensity, except
a. amplitude of vibration. b. medium density.
c. frequency. d. wind direction.
4. The light ray refracts the normal when it travels from glass to air.
a. near to b. a way from c. along d. perpendicular to

Part 3

B Put (✓) or (✗) :

1. In irregular reflection, the reflected rays are reflected in different directions. ()
2. Crest is the highest point of the particles of the medium in transverse wave. ()
3. The fertilized ovum contains the complete number of chromosomes. ()

C Give a reason for :

Petals of corolla are bright coloured and scented leaves.

Question 3

A Write the scientific term :

1. It is the motion, which is regularly repeated in equal periods of times.
2. The number of complete oscillations produced by the oscillating body in one second.
3. A cell, which its nucleus contains 23 pairs of chromosomes resulting from the fusion of sperm and ovum.
4. The distance between two successive crests or two successive troughs.

B Correct the underlined words :

1. Corolla is the outer whorl of flower and it consists of a group of green leaves.
2. The energy of red photon has the maximum energy in spectrum colours.
3. The measuring unit of frequency is meter.

C What happens when ... ?

A light ray falls perpendicular on a reflecting surface.

Question 4

A Give one example for :

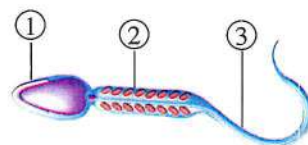
- | | |
|------------------------|--------------------------|
| 1. Longitudinal wave. | 2. Unisexual plant. |
| 3. Transparent medium. | 4. Electromagnetic wave. |

B Give reasons for :

1. Carton is an opaque medium.
2. Pollen grains of air pollinated flowers are light in weight and dry.
3. The sperm has a long thin tail.

C Study the opposite figure,

Then label the figure





13 Menofia Governorate

El-Shohadaa Educational Zone

Question 1

A Choose the correct answer :

- The result of multiplying of the frequency of a vibrating body by its periodic time equals
a. $\frac{1}{2}$ b. $\frac{1}{4}$ c. $\frac{1}{3}$ d. 1
- The human ears can distinguish sound of frequency Hz.
a. 50 kilo b. 30 kilo c. 30 d. 5
- The genital associated glands secrete fluid.
a. neutral b. alkaline c. acidic d. salty
- The right ovary in the female human usually produces a mature ovum every days.
a. 14 b. 28 c. 34 d. 56

B Write the scientific term :

- The lowest point of the particles of the medium in the transverse waves.
- The result of the photon energy divided by the frequency.
- The fusion of the male nucleus with the ovum to form the zygote.

C Put a sign (>), (<) or (=)

- The apparent position of a coin placed in a cup containing water () its real position.
- The speed of light in air () The speed of sound in air.

Question 2

A Put (✓) or (✗) :

- The horizontal distance between two successive crest and trough equals half of the wavelength. ()
- A man's voice is high pitched than a woman's voice. ()
- The difference of light speed in the different media leads to the occurrence of the light refraction phenomenon. ()
- The calyx consists of coloured leaves called petals. ()

B Complete the following sentences :

- The waves are classified according to its ability to propagate and transfer energy, into and waves.
- The angle of is the angle between the refracted light ray and the at the point of incidence on the interface.
- The sperm consists of , a midpiece and

Part 3

C Give one example of each of :

1. Plant reproduces by tubers.

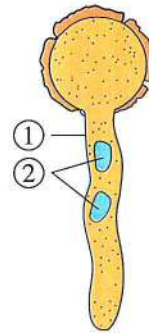
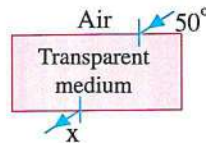
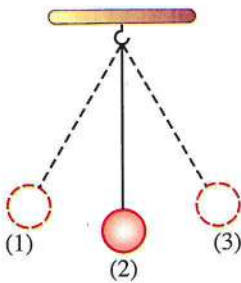
2. Plant reproduces by grafting attachment.

Question 3

A Cross out the odd word and mention what links the rest of words :

1. The movement of : (The simple pendulum – The spring – The rotary bee – The stretched string).
2. Water wave – Light wave – Infrared wave – Radio wave.
3. Sound intensity – Sound speed – Sound quality – Sound pitch.
4. Puerperal fever – Measles – Syphilis – AIDS.

B State what is required under each of the following forms :



1. The position
has the greatest speed of
the pendulum (1 – 2 – 3)

2. State the name of the
angle (x)
its value =

3. Write what the
numbers indicate ?
①
②

C If one of the gears of the Savart's wheel has 50 teeth and it rotates 300 cycles per minute to give a certain tone, how many cycles does another gear rotate in 1.5 minutes to give a tone has the same frequency if it has 60 teeth.

Question 4

A Correct the underlined words :

1. The wave that propagates in the same direction of medium particles vibration is know as a transverse wave.
2. White light is consists of nine spectrum colours.
3. The measuring unit of noise intensity is watt/m².
4. The flower, symbolized by the symbol (♀), has carpels and stamens.

B State one importance of each of the following :

1. Triangular glass prism.
2. Receptacle.
3. Fallopian tube.

C State what is responsible for :

1. Production of sperms.
2. Formation of fruit from the flower.



14 Port Said Governorate

Port Said Educational Zone

Question 1

A Choose the correct answer :

- Some plants have bisexual flowers such as
a. petunia. b. palm. c. maize. d. pumpkin.
- All electromagnetic waves have the same in the space.
a. amplitude b. frequency c. velocity d. periodic time
- The light ray which is incident perpendicular to the separating surface between two different transparent media will
a. reflect. b. refract towards the normal.
c. reflect on itself. d. pass without refraction.
- The green coloured leaves of the flower are known as
a. petals. b. sepals. c. stamens. d. carpels.
- If the wavelength of a wave is doubled, the wave velocity will
a. decrease to the quarter. b. increase 4 times.
c. decrease to the half. d. increase twice.
- The light velocity is the maximum in the
a. diamond. b. glass. c. air. d. water.
- From the natural methods of vegetative reproduction in plants is the
a. offshoots. b. grafting. c. tissue culture. d. cutting.
- The distance between the two maximum displacements of a vibrating body is equal to of a complete oscillation.
a. quarter b. half c. double d. 4 times
- If the angle of incidence of a light ray on a reflecting surface is zero°, the angle between the reflected light ray and reflecting surface will be degree.
a. zero b. 45 c. 60 d. 90
- Stigma, style and ovary are components of the
a. stamen. b. calyx. c. corolla. d. carpel.
- When a vibrating body produces 600 vibrations in a minute, its frequency will be Hertz.
a. $\frac{1}{600}$ b. 600 c. $\frac{1}{10}$ d. 10
- The photon energy is
a. inversely proportional to its frequency.
b. directly proportional to its intensity.
c. inversely proportional to the square of its velocity.
d. directly proportional to its frequency.

Part 3

13. A number of flowers that is carried on an axis is known as a (an)
 a. perianth. b. receptacle. c. calyx. d. inflorescence.
14. The motion of the clock pendulum is considered as a motion
 a. wave b. periodic c. vibrational d. (b) and (c) together
15. The closest light to the base of the prism when light is analyzed by the prism is the light
 a. violet b. blue c. red d. yellow
16. The egg (ovum) is a relatively big-sized cell and
 a. is static. b. is mobile.
 c. does not store any nutrient material. d. contains the complete genetic material.
17. When the density of the medium increases, the sound intensity
 a. increases. b. decreases.
 c. does not change. d. decreases to the half.
18. The midpiece of the sperm contains to supply it with energy.
 a. nucleus b. zygote c. mitochondria d. ovum
19. The speed of the simple pendulum as it gets towards its resting position.
 a. decreases b. increases c. reduces d. is not affected
20. If the speed of rotation of Savart's wheel which produces a sound its frequency is 200 Hertz is 300 turns per minute, the number of teeth of this wheel (gear) will be
 a. 40 b. 50 c. 60 d. 90
21. The number of chromosomes in the ovum (egg) equals number of chromosomes in the sperm.
 a. quarter the b. half the c. the same d. double the
22. The unit of measuring the amplitude is the
 a. metre. b. ton. c. gram. d. second.
23. The is considered as a translucent medium.
 a. milk b. flint glass c. water d. tree leaves
24. All of the following are components of the human female reproductive system except the
 a. two ovaries. b. two fallopian tubes. c. uterus. d. two vas deferenses.
25. The sound with a frequency of 600 Hertz has a lower pitch than the sound with a frequency of Hertz.
 a. 200 b. 400 c. 500 d. 800

B Answer the following questions:

26. Compare between :

The vibrational motion and the wave motion (in terms of giving examples only).

27. State the function of : Human female ovary.



28. **What happens when ... ?** Occurrence of reflection and refraction of light in the layers of the atmosphere in the desert at noon.
29. **What is meant by ... ?** The amplitude of the wave is 3 meters.
30. **What are the results of ... ?**
The presence of one ovum in the flower's ovary.
31. **Write the scientific term :** The ability of the transparent medium to refract light.
32. **What happens when :** Increasing the frequency of a wave to the double of its value when the wave velocity is constant (in terms of its wavelength).
33. **Write the scientific term :**
The transfer of pollen grains from anthers to the stigmas of flowers.
34. **State the importance of :** The triangular prism.
35. **What happens when ... ?** Increasing the length of the vibrating air columns (in terms of the sound pitch).

15 Kafr El-Sheikh Governorate

Science Inspectorate

Question 1

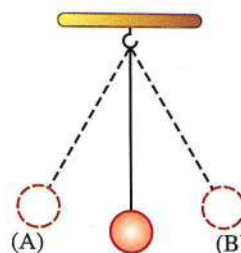
A Choose the correct answer :

1. If the frequency of a green light photon is 5.65×10^5 GHz, so the frequency of a yellow light photon may equal
a. 6×10^{14} Hz. b. 6.5×10^6 GHz. c. 5.24×10^{14} Hz. d. 5.20×10^7 GHz.
2. The velocity of a sound wave is the fastest in
a. air. b. water. c. carbon dioxide gas. d. aluminum.
3. If the distance between the center of the fourth compression and that of the eight compression is 10 meters, the wave velocity of frequency 200 Hz will equal
a. 20 m/sec. b. 2000 m/sec. c. 500 m/sec. d. 250 m/sec.
4. The produced fruits by grafting belong to the type of
a. scion. b. cut. c. stock. d. bud.

B Write the scientific term :

1. The hormone which is responsible for continuity of pregnancy.
2. The motion that is regularly repeated at equal periods of time.
3. The transfer of pollen grains from the anthers of a flower to stigmas.

- C In the opposite figure,** the oscillating body takes 2 seconds to move from position (A) to position (B), so its periodic time equals



Part 3

Question 2

A Put (✓) or (✗) :

1. A pumpkin's flower contains the four flowers' whorls. ()
2. The right ovary produces a mature ovum every 28 days. ()
3. Visibility through a transparent medium increases by increasing its thickness. ()
4. Syphilis disease is caused by spiral shaped bacteria. ()

B Mention one function of the following :

1. Jacuzzi.
2. Glass prism.
3. Petals.

C Savart's wheel rotates with a rate of 300 cycles per minute. A sound of frequency 600 Hz is produced when an elastic plate touches the teeth of one gear. Calculate the number of the gear's teeth.

Question 3

A Complete the following sentences :

1. The tuber is a as sweet potatoes or a as potatoes.
2. The horizontal distance between two successive crests is called , while half the vertical distance between a crest and the next trough is called
3. The nucleus of a sperm contains chromosomes, and a fertilized ovum contains chromosomes.
4. The harmonic tone is in pitch and in intensity than the fundamental tone.

B Mention one example for :

1. An oscillatory motion.
2. A longitudinal wave.
3. A smooth reflecting surface.

C What happens if ... ?

The distance between a sound source and the ears is doubled.

Question 4

A Cross out the odd word, and write the relation between the other :

1. Violin – Guitar – Drill – Reed pipe.
2. Peas – Apricot – Watermelon – Beans.
3. Vas deferens – Uterus – Penis – Testes.
4. 300 Hz – 10 KHz – 18 KHz – 25 KHz.

B Give reasons for :

1. A woman's voice is sharper than a man's voice.
2. A light ray is reflected on itself when it falls on a reflecting surface.
3. We see lightning before hearing thunder.

C In the opposite figure, if a light ray passes through different transparent media (A, B and C), which medium has the highest optical density.





16 Behira Governorate

Kafr El-Dawar Educational Zone

Question 1

A Choose the correct answer :

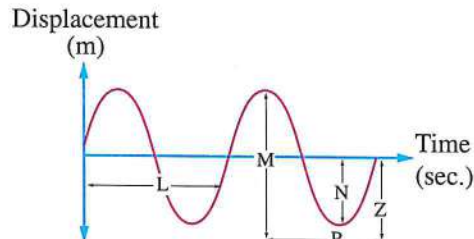
1. Androecium consists of
a. carpels. b. stamens. c. stigmas. d. sepals.
2. Absolute refractive index of any transparent media can't be equal
a. 1.8 b. 0.8 c. 1.5 d. 1.4
3. The measuring unit of wave velocity is m/s and it is equivalent to
a. $\frac{\text{Hertz}}{\text{meter}}$ b. Hertz \times meter. c. Newton. d. watt.
4. The ratio between frequency of green light and frequency of yellow light one.
a. less than b. equal c. more than d. double

B Put (✓) or (✗) and correct the wrong ones :

1. The simple harmonic motion represents by straight line. ()
2. The reproduction in mango tree happens by cutting. ()
3. The kinetic energy of pendulum decreases by increasing its speed. ()

C The opposite figure represents an oscillatory motion for a simple pendulum. Choose the letter that denotes.

1. The amplitude.
2. The oscillation of the pendulum
Forming $\frac{3}{4}$ complete oscillation.



Question 2

A Odd the different word then write relation between the rest of words :

1. AIDS – Gonorrhea – Syphilis – Measles.
2. Photon's energy – Wavelength – Planck's constant – Frequency.
3. Cutting – Pollination – Layering – Grafting.
4. Sound wave – Light wave – Radio wave – Infrared wave.

B Put (>) or (=) or (<) in front of the following sentences :

1. The number of chromosomes in female gamete () the number of chromosomes in male gamete.
2. The speed of mechanical waves is () the speed of electromagnetic waves in air.
3. The energy of photon of orange light () the energy of photon of red light.

C What happens when ... ?

The fallopian tubes are ligated.

Question 3

A Correct the underlined words :

1. Placenta nourishes fetus through the vas deferens.
2. Sound wave doesn't travel through liquids because it is a mechanical wave.
3. When the distance between the source of light and surface increase to double the light intensity decrease to half.
4. Light travels through transparent media in the form of straight line. whose speed can be controlled.

B Complete the following statement by using the following words :

(fruit – androecium – insects – air – zygote – androecium and gynoecium)

1. Male flower contains
2. The ovary of flower after fertilization change to
3. Flowers pollinated by are coloured and big.

C Savart's wheel rotates with rate of 300 cycle per minute. A sound of frequency 600 Hz is produced when an elastic plate touches the teeth of one gear. Calculate the number of teeth of the gear.

Question 4

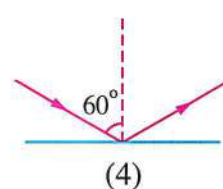
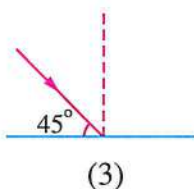
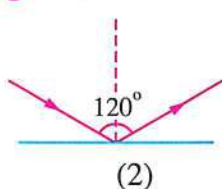
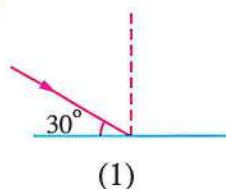
A Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Sound intensity	a. property by which ear can distinguish between different sound even they are equal in intensity and pitch.
2. Sound pitch	b. is inversely proportional to frequency.
3. Sound quality	c. property by which ear can distinguish between strong and weak sound.
4. Harshness of voice	d. property by which ear can distinguish between sound wave and light wave.
	e. property by which ear can distinguish between sharp and harsh sound.

B Write the scientific term :

1. They are sound waves of frequencies lower than 20 Hz.
2. It is used to treat sprains, cramps and nervous tension by using cold or hot water.
3. The ratio between velocity of wave and its frequency.

C Form the following figures, determine the different one :



17 Fayoum Governorate**Science Inspectorate****Question 1****A Complete the following statements :**

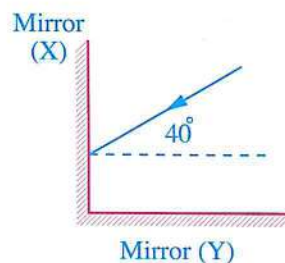
1. Waves are classified according to the ability to propagate and transfer energy into and waves.
2. Sound intensity at a certain point is proportional to the square of the distance between this point and the sound source, and is proportional to the square of the amplitude.
3. Hermaphrodite flowers take the symbol , while male flowers take the symbol
4. glands and gland are from the glands associated with the male genital system.

B Give one example for :

1. Organ at which the ovum is produced.
2. Longitudinal waves.
3. Transparent medium.

C Complete the path of rays in the following figure, then :

Determine of the angle of reflection of the light ray on mirror (Y)

**Question 2****A Correct the underlined words :**

1. In transverse waves, the medium particles vibrate along the direction of the wave propagation direction.
2. Absolute refractive index of a medium is always greater than four.
3. The use of light waves in milk sterilization.
4. After fertilization in plants, the ovum is changed into fruit.

B Exclude the unsuitable word or sentence and mention what the rest has in common :

1. Sound intensity – Medium density – Wind direction – Frequency.
2. AIDS – Gonorrhea – Syphilis – Measles.
3. Amplitude – Wave velocity – Frequency – Wavelength.

C What's meant by the following ... ?

Tissue culture of a plant root.

Part 3

Question 3

A Write the scientific term :

1. The motion produced as a result of the vibration of the particles of the medium *in a certain point and in a certain direction*.
2. The periodic motion made by the oscillating body around its point of rest, where the motion is repeated through equal intervals of time.
3. An oval shaped gland that produces male cells.
4. Changing the path of light when it travels from a transparent medium to another transparent medium of different optical density.

B Write the number which indicates the following :

1. A frequency of a body that makes two complete oscillations in 200 seconds
2. The absolute refractive index of diamond given that the speed of light in it = 1.25×10^8 m/s (The velocity of light in air equals 3×10^8 m/s)
3. The number of days for the right ovary to produce of one ovum

C Savart's wheel rotates with a rate of 300 cycles per minute. A sound of frequency 600 Hz is produced when an elastic plate touches the teeth of the gear. Calculate the number of teeth of the gear.

.....

.....

Question 4

A Choose the correct answer :

1. The quantum of energy of green light is the quantum of energy of yellow light.
a. greater than b. equal to c. less than d. no relation
2. Sound of frequency 200 Hz is than sound of frequency 100 Hz.
a. sharper b. stronger c. harsher d. weaker
3. When the oscillating body makes quarter oscillation through one second, so its frequency equals Hertz.
a. $\frac{1}{4}$ b. 4 c. 2 d. $\frac{1}{2}$
4. The female flower contains floral whorls.
a. three b. four c. five d. six

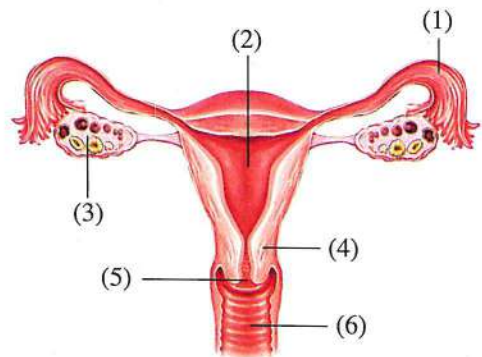
B Give reasons for the following :

1. The man whose testes are still present inside the abdominal cavity, is infertile (sterile).
2. The petals of corolla are colorful and scented.
3. The light ray that is incident perpendicular on a glistening surface reflects on itself.



- C** Study the opposite figure which represents the female genital system, then answer the following question :
What's the organ in which (write name and the number in figure) :

- The ovum is fertilized.
- The embryo is delivered to life.



18 Sohag Governorate

Private Future Generation School

Question 1

- A** Complete the following statements by using these words :

(sperms – amplitude – crest – ova – noise – longitudinal – four – musical tones)

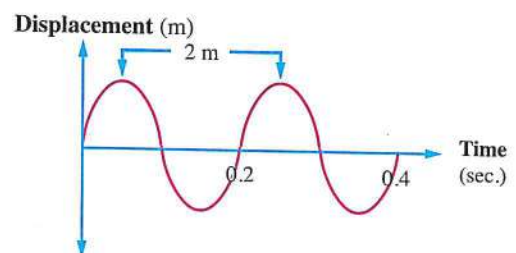
1. The compression in the wave is equivalent to the in the transverse wave.
2. is the male gamete in human, while is the female gamete in human.
3. are tones of uniform frequency and comfortable to be heard, while are sounds of non-uniform frequency and uncomfortable to be heard.
4. The complete oscillation includes successive maximum displacements, each one is called

- B** Mention one example for each of the following :

1. Unisexual flower.
2. Oscillatory motion.
3. Spectrum colour that have the highest frequency.

- C** From the opposite figure :

Calculate the wave velocity.



Question 2

- A** Choose the correct answer :

1. Light travels in lines.

a. straight

b. curved

c. circular

d. zigzag

Part 3

- The frequency of the oscillating body is measured by a unit called
a. second. b. Hertz. c. meter. d. watt/m².
- If the distance between the center of the third compression and the center of the fifth compression on the wave propagation is 20 cm, then the wavelength of this wave equals
a. 40 cm. b. 20 cm. c. 10 cm. d. 5 cm.
- Fertilization occurs when is formed.
a. embryo b. zygote c. endometrium d. ovum

B Choose the odd word :

- Calyx – Corolla – Stem – Androecium.
- Wavelength – Wave amplitude – Wave frequency – Wave pressure.
- Air – Pure water – Wood – Glass.

C Calculate the absolute refractive index of glass given that the speed of light in it equals 1.5×10^8 m/s, and the velocity of light in air equals 3×10^8 m/s.

Question 3

A Write the scientific term :

- The tones accompanying the fundamental tone but they are higher in pitch and less in intensity.
- The time taken by the oscillating body to make one complete oscillation.
- Short stem where leaves developed and modified into reproductive organs.
- The angle between the incident light ray and the normal at the point of incidence on the separating surface.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Infrasonic waves	a. used in analysis of light.
2. Rest position	b. sound waves of frequencies lower than 20 Hz.
3. Triangular glass prism	c. the position at which the velocity of the oscillating body reaches its maximum value.

C Calculate the number of the gear teeth of Savart's wheel, given that the frequency of the sound produced is 100 Hz and the wheel rotates 30 cycles in a minute.

Question 4

A Put (✓) or (✗) :

- The sound pitch is the property by which the ears can distinguish between strong and weak sound. ()


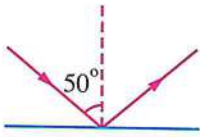


2. Wave velocity is constant in the same medium and differs from one medium to another. ()
3. Each carpel consists of ovary, style and stigma. ()
4. The oscillatory motion is a periodic motion as its regularly repeated at equal periods of time. ()

B Correct the underlined words :

1. The ovum is a mobile cell of a relatively large size.
2. Max Planck proved that the energy of light waves is composed of protons.
3. The transverse wave is a disturbance in which the particles of the medium vibrate in the same direction of wave propagation.

C Study the following figures then answer :

	
<p>1. This figure represents phenomenon</p>	<p>2. Calculate the angle of reflection =</p>

19 Luxor Governorate

Esna Educational Zone

Question 1

A Complete the following statements :

1. The transverse wave consists of and
2. Savart's wheel is used to determine the of unknown sound tone.
3. hormone in males and the hormone in females are responsible for appearance for secondary sexual characters.
4. The outer whorl of flower is called , where each leaf is called

B Put (✓) or (✗) :

1. The carpel of flower consists of filament and anther. ()
2. Uniform reflection occurs from smooth shiny surface. ()
3. The result of multiplying frequency of an oscillating body by its periodic time equals $\frac{1}{2}$. ()

C Calculate the frequency of an oscillating body which makes 240 complete oscillations in one minute.

Question 2

A Write the scientific term :

1. Short stem where the leaves developed and modified into reproductive organs.
2. Seven colours are produced as resulted of splitting of white light.
3. A property by which ear can distinguish between harsh and sharp voice.
4. The number of complete oscillations produced by the oscillating body in one second.

B Cross out the odd word :

1. Stigma – Stamen – Style – Ovary.
2. Water waves – Radio waves – Light waves – Infrared waves.
3. Pendulum motion – Spring motion – Rotary bee motion – Starched string motion.

© Compare between :

Sperm and ovum in term of (size – number – motion).

Question 3

A Choose the correct answer :

- The maximum displacement done by an oscillating body away from its rest position is called
 - amplitude.
 - complete oscillation.
 - periodic motion.
 - frequency.
- All the following are organs of male reproductive system, except
 - vas deferens.
 - uterus.
 - testes.
 - penis.
- The human can hear sounds of frequency
 - 50 KHz.
 - 30 KHz.
 - 300 Hz.
 - 10 Hz.
- The motion that regularly repeated in equal periods of time is called motion.
 - wave
 - regular
 - oscillatory
 - periodic

B Mention one example for :

1. Mechanical waves. 2. A plant which pollinated by man. 3. Translucent medium.

C Give a reason for :

The petals of corolla are colorful and scented.

Question 4

A Correct the underlined words :

1. Light **reflection** in the change of light path when it passes through two different media.
2. **Sonic** waves are used in sterilization of milk.



3. The distance between the first crest and third crest of a transverse wave is 10 cm, so the wavelength is 10 cm.
4. Natural vegetative reproduction is carried out in potatoes by corms.

B Mention one importance :

1. Glass prism.
2. Androecium.
3. Vas deferens.

C Write the measuring unit for the following :

1. Noise intensity.
2. Sound intensity.

20 South Sinai Governorate

Science Inspectorate

Question 1

A Complete the following statements :

1. Rotary bee motion doesn't considered as a/an motion although it is a/an motion.
2. The longitudinal wave consists of and
3. The incubation period of puerperal sepsis disease is while that of syphilis disease is
4. The anther consists of chambers containing

B Put (✓) or (✗) :

1. The ear can distinguish between the nature of the sound source by sound intensity. ()
2. The typical flower contains three floral whorls. ()
3. Irregular reflection occurs by skin or plant leaves. ()

C Choose the correct answer :

The ratio of frequency of red light to frequency of violet light is one.
(more than – less than)

Question 2

A Cross out the odd word then write the scientific term of the rest :

1. Amplitude – Frequency – Wavelength – Complete oscillation. (.....)
2. Sterilization of milk – Diagnosis of some diseases –
Discovery of landmines – Measuring pressure. (.....)
3. Cutting – Pollination – Layering – Grafting (.....)
4. Head – Midpiece – Epididymis – Tail (.....)

Part 3

B Choose the correct answer :

- The human's ear can distinguish the sound of frequency.
a. 50 Hz b. 50 KHz c. 5 Hz d. 25 KHz.
- light is the most deviation.
a. White b. Red c. Violet d. Yellow
- The flower of plant is a hermaphrodite flower.
a. maize b. cotton c. palm d. pumpkin

C Calculate the absolute refractive index of glass knowing that the velocity of light through air is 3×10^8 m/s and the velocity of light through glass is 2×10^8 m/s.

Question 3

A Correct the underlined words :

- The amplitude represents half of the complete oscillation.
- By increasing the surface area, sound intensity remains as it is.
- White light is a complex light that is composed of nine lights.
- Reproduction by tubers occurs by roots as in cane.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Uterus	a. frequency \times wavelength.
2. Wave velocity equals	b. directly proportional to light frequency.
3. Photon energy	c. gland has the size of peeled almond lies in the lower part of abdominal cavity from the back.
	d. hollow pear-shaped organ lies in the pelvic cavity.

C Calculate the number of gear teeth in the Savart's wheel that produces sound of 200 Hz frequency when it rotates with a rate of 60 cycles in a minute.

Question 4

Answer the following :

A Write the scientific term :

- Fundamental tone accompanied with harmonic tone.
- The angle between the emergent light ray and the normal at the point of emergence on the interface.
- Alkaline fluid is secreted by male genital associated glands.
- The disturbance that propagates and transfers energy in the direction of propagation.



B Answer each of the following :

1. Give a reason for :

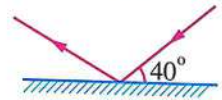
Peach fruit contains only one seed, while pea plant contains more than one seed.

2. Compare between :

Mechanical waves and electromagnetic waves according to the medium of propagation.

3. From the opposite figure :

Calculate the periodic time.



C Complete :

The value of the angle of reflection in the opposite figure is



Guide Answers of Final Examinations

2024

Cairo Governorate

1 St. Joseph Maronite Language Schools

- 1 (A) 1. transverse waves – longitudinal waves
2. 20Hz – 20 KHz.
3. amplitude of vibration – area of vibrating surface.
4. the female cell nucleus (ovum) – zygote.
(B) 1. (✓) 2. (✗) 3. (✓)
(C) Decibel.

- 2 (A) 1. Harmonic tones. 2. The speed of light.
3. Uterus. 4. Corolla.
(B) 1. Red 2. Androecium
3. equal to
(C) Because reproduction occurs through parts of root, stem, leaves or buds as a type of reproduction known as vegetative reproduction.

- 3 (A) 1. d 2. a 3. b 4. c
(B) 1. periodic time. 2. wavelength.
3. wave velocity.
(C) Frequency
$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$
$$300 = \frac{30 \times \text{No. of gear teeth}}{60}$$
$$\text{No. of gear teeth} = \frac{300 \times 60}{30} = 600 \text{ teeth.}$$

- 4 (A) 1. b 2. c 3. a 4. b
(B) 1. Sonic waves and infrasonic waves

Point of comparison	Sonic waves	Infrasonic waves
Their frequencies :	Between 20 Hz to 20 KHz	Less than 20 Hz

2. Transparent medium and translucent medium

Point of comparison	Transparent medium	Translucent medium
Definition :	It is the medium which permits most light to pass through.	It is the medium which permits a part of light to pass through.

Point of comparison	Grafting by attachment	Grafting by wedge
Method :	The scion is attached to the stock	The scion is inserted into a cleft in the stock

(C) Sound wave, the rest are electromagnetic waves.

2 Leaders Language School

- 1 (A) 1. a 2. c 3. b 4. d

- (B) 1. Amplitude.
2. The angle of reflection.
3. stamen

- (C) Absolute refractive index
$$= \frac{\text{Velocity of light in air}}{\text{Velocity of light in diamond}}$$
$$= \frac{3 \times 10^8}{1.25 \times 10^8} = 2.4$$

- 2 (A) 1. petals. 2. inversely
3. 20 – 20 K 4. 10
(B) 1. Progesterone 2. 45°
3. violet
(C) The are longitudinal because the particles of the medium vibrate along the direction of wave propagation forming compressions and rarefactions and mechanical because they need a medium to propagate through.

- 3 (A) 1. (✗) 2. (✗) 3. (✓) 4. (✓)

- (B) 1. Testes. 2. Anther
2. Fallopian tube.

- (C) Frequency
$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$
$$300 = \frac{600 \times \text{No. of gear teeth}}{60}$$
$$\text{No. of gear teeth} = \frac{300 \times 60}{30} = 600 \text{ teeth.}$$

- 4 (A) 1. b 2. d 3. a 4. c

- (B) 1. The zygote is formed.
2. The sound intensity decreases to its quarter value.
3. The sound velocity increases.

(C) Number of complete oscillations

$$= \text{Frequency} \times \text{time}$$

$$= 6 \times 120$$

$$= 720 \text{ oscillations}$$

3 East Nasr City Education Zone

- 1 (A) 1. anther 2. Periodic time
3. decibel. 4. high

- (B) 1. a. It protects the reproductive organs.
b. It attracts insects to the flower, which help in the reproduction process.
2. a. Production of sperms.
b. Production of male sex hormone (testosterone hormone).
3. It is used to determine the pitch (frequency) of an unknown tone.

(C) Frequency

$$= \frac{\text{Number of complete oscillations}}{\text{Time in seconds}}$$

$$= \frac{360}{60} = 6 \text{ Hz}$$

- 2 (A) 1. Infrasonic waves. 2. Opaque medium.
3. Tissue culture. 4. Amplitude.

- (B) a. 10 cm.
b. 0.4 sec.
c. Frequency

$$= \frac{\text{Number of complete oscillations}}{\text{Time in seconds}}$$

$$= \frac{2}{0.8} = 2.5 \text{ Hz}$$

(C) It will refract near the normal.

- 3 (A) 1. a 2. c 3. b 4. d

- (B) 1. (✗) 2. (✓) 3. (✗)

(C) Because the velocity of light through air is always greater than that through any other transparent medium.

- 4 (A) 1. Stamen. 2. Frequency.
2. Sound waves. 4. Rotary bee motion.

- (B) 1. wood. 2. a root.
3. 20 Hz : 20 KHz.

(C) The size of sperm is small while the size of the ovum is relatively large.

4 El Nozha Educational Zone

- 1 (A) 1. Watt / m² – decibel.
2. transverse – centre of compression
3. fruit – seed. 4. low – high

- (B) 1. Black. 2. Water wave.
3. Testes.

(C) Used in breaking down kidney and ureter stones without any surgical operations.

- 2 (A) 1. b 2. c 3. a 4. a

- (B) 1. Calyx → Corolla → Stamen → Carpel.
2. Testes → Epididymis → Vas deferens → Urethra.
3. Wood > Water > Carbon dioxide > Air.

(C) Frequency

$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$

$$100 = \frac{120 \times \text{No. of gear teeth}}{60}$$

$$\text{No. of gear teeth} = \frac{100 \times 60}{120} = 50 \text{ teeth.}$$

- 3 (A) 1. Flower. 2. Self pollination.
3. Sound pitch. 4. Fallopian tubes.

- (B) 1. Peaches. 2. Sound wave.
3. Mirror.

(C) It will reflect on itself.

- 4 (A) 1. (✗) 2. (✓) 3. (✗) 4. (✓)

- (B) 1. Because they have the ability to kill some types of bacteria and stop the action of some viruses.
2. To attract insects to help in the reproduction process.
3. Because the light of lightning is electromagnetic waves, while the sound of thunder is mechanical waves, where the velocity of propagation of electromagnetic waves is much greater than the velocity of propagation of mechanical waves in air.

(C) uterus.

5 Abdeen Educational Zone

- 1 (A) 1. crests – troughs.

2. breaking down of kidney and ureter stones without any surgical operations – sterilizing of food, water and milk.

3. Calyx – corolla 4. stamen – carpel

- (B) 1. Testes.
2. The angle of reflection.
3. Wavelength.

(C) Human skin.

2 (A) 1. (✓) 2. (✗) 3. (✓) 4. (✗)

- (B) 1. c 2. a
3. a

(C) Periodic time = $\frac{1}{\text{Frequency}} = \frac{1}{4}$ second

3 (A) 1. Nanometer. 2. Testis.
3. Epididymis. 4. Drill.

- (B) 1. Self pollination 2. Ovary
3. Slower

(C) The quantity of light that passes through it decreases.

4 (A) 1. b 2. a 3. d 4. c

- (B) 1. Because the sound is mechanical waves, which can't propagate through vacuum between the Sun the Earth, while the light is electromagnetic waves, which can propagate through vacuum.
2. Because they have high ability to kill some types of bacteria and stop the action of some viruses.
3. To stick on the insect body.

(C) It is the maximum displacement achieved by the oscillating body away from its rest position.

Giza Governorate

6 Egypt Dream Language School

1 (A) 1. b 2. b 3. b 4. c

- (B) 1. Stamen. 2. Sound waves.
3. Fallopian tubes.

(C) 1. Water waves. 2. Rhizomes.

2 (A) 1. Ultrasonic waves 2. sound velocity.
3. self pollination 4. an alkaline

- (B) 1. (✗) 2. (✓) 3. (✓)

(C) 1. 1 meter. 2. 0.4 second.

3 (A) 1. Translucent media 2. more than one.
3. watt/m². 4. $\frac{1}{200}$ seconds

- (B) 1. c 2. a 3. b

(C) Frequency
= $\frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$

$$600 = \frac{300 \times \text{No. of gear teeth}}{60}$$

$$\text{No. of gear teeth} = \frac{600 \times 60}{300} = 120 \text{ teeth.}$$

4 (A) 1. Wavelength. 2. Flower.
3. Frequency. 4. Zygote.

- (B) 1. Because the angle of incidence = angle of reflection = zero°
2. To attract insects to the flower, which help in the reproduction process.
3. Because the sound velocity through solids (the ground) is larger than through air.

(C) 1. 2 meters. 2. 2 seconds.
3. 1 m/sec. 4. 1

7 6 October Educational Zone

1 (A) 1. c 2. c
3. c 4. a

- (B) 1. less 2. testosterone.
3. sepal.

(C) 1. Water waves. 2. Potatoes.

2 (A) 1. Rotary bee motion. 2. Testis.
3. Wood. 4. Drill.

- (B) 1. (✗) 2. (✗) 3. (✓)

(C) Frequency
= $\frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$

$$F = \frac{960 \times 30}{120} = 240 \text{ Hz.}$$

3 (A) 1. electromagnetic - vacuum.
2. sexual - asexual.
3. regular - irregular.
4. 20 - 20000

- (B) 1. d 2. c 3. b

(C) Because the light of lightning is electromagnetic waves, while the sound of thunder is mechanical waves, where the velocity of propagation of electromagnetic waves is much greater than the velocity of propagation of mechanical waves in air.

- 4 (A) 1. Glass prism. 2. Compression.
3. Periodic time. 4. Bisexual flower.

- (B) 1. It protects the inner part of the flower specially before blooming.
2. Treatment of sprains and cramps by hot water and nervous tension by cold water.
3. Discover malignant tumor.
(C) frequency.

8 Agoza Educational Zone

- 1 (A) 1. Oscillatory motion.
2. Optical density of the medium.
3. Calyx. 4. Infrasonic waves.
(B) 1. root. 2. equal to.
3. increases.
(C) Frequency

$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$

$$100 = \frac{30 \times \text{No. of gear teeth}}{60}$$

$$\text{No. of gear teeth} = \frac{100 \times 60}{30} = 200 \text{ teeth.}$$

- 2 (A) 1. c 2. b 3. d 4. a
(B) 1. Wood. 2. Prostate gland.
3. Rotary bee motion.
(C) 1. Meter. 2. Watt/m².

- 3 (A) 1. (x) 2. (✓) 3. (✓) 4. (x)
(B) 1. d 2. c 3. b
(C) 1. Water waves.
2. Sound of female.

- 4 (A) 1. electromagnetic – mechanical
2. fruit – seed
3. sharp – harsh voices.
4. transverse – centre of compression
(B) 1. It analyses the white light into seven spectrum colours.
2. Production of sperms.
3. Breaking down of kidney and ureter stones.
(C) Because the light of lightning is electromagnetic waves, while the sound of thunder is mechanical waves, where the velocity of propagation of electromagnetic waves is much greater than the velocity of propagation of mechanical waves in air.

Alex. Governorate

9 Borg El-Arab Educational Zone

- 1 (A) 1. real – apparent 2. stamen – carpel.
3. white – seven spectrum
4. decibel – watt/m²
(B) 1. Part (x) : anther Part (y) : stigma.
2. Production of pollen grains.
3. Flower (A) : bisexual flower
Flower (B) : male flower
(C) 50°

- 2 (A) 1. straight 2. a single-seed
3. air 4. oscillatory
(B) 1. 0.4 sec. 2. 2.5 cycle/sec.
3. 2 cm
(C)

Points of comparison	Sonic waves	Ultrasonic waves
• Their frequencies :	Between 20 Hz to 20 KHz (20000 Hz).	Higher than 20 KHz (20000 Hz).
• Hearing by man :	Heard.	Cannot be heard.

- 3 (A) 1. Periodic time. 2. Calyx.
3. Crest. 4. Light refraction.
(B) 1. (x) 2. (x) 3. (✓)
(C) Absolute refractive index

$$= \frac{\text{Velocity of light in air}}{\text{Velocity of light in glass}} = \frac{3 \times 10^8}{2 \times 10^8} = 1.5$$

- 4 (A) 1. a 2. c 3. d 4. b
(B) 1. The ovary becomes a fruit, and the ovule becomes a seed.
2. The light intensity decreases to its quarter.
3. The intensity of the produced tone increases.

(C)

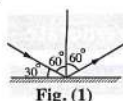


Fig. (1)

1. 60°

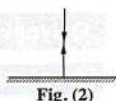


Fig. (2)

2. Zero°

10 East Educational Zone

- 1** (A) 1. an oscillatory 2. larger than
3. Flower 4. The uterus
(B) 1. Amplitude. 2. Light.
3. Disease incubation period.
(C) propagates – transfers

- 2** (A) 1. d 2. c 3. c 4. a
(B) 1. (x) 2. (✓) 3. (x)

(C) Because the ovary of olive contains one ovule, while the ovary of pea contains several ovules.

- 3** (A) 1. oscillatory 2. circular
3. straight 4. male
(B) 1. Hz. 2. opaque
3. Bisexual flowers.

(C)

P.O.C	Transparent medium	Opaque medium
Definition :	It is the medium which permits only a part of light to pass through and absorbs the remaining part	It is the medium that doesn't permit light to pass through.
Examples :	Flint glass - tissue paper.	metals, wood, cartoon, human skin.

- 4** (A) 1. Radio waves. 2. Black.
3. Wood. 4. Rhizomes

- (B) 1. Because it does not need a medium to propagate through.
2. To prevent them from extinction.
3. To catch pollen grains from air.

(C) Fallopian tubes

Qalyoubia Governorate

11 Banha Educational Zone

- 1** (A) 1. c 2. c
3. a 4. d

- (B) 1. 1500 m/sec 2. 0°
3. three floral whorls.

(C) It is used in sterilization of food, water and milk.

- 2** (A) 1. Wave amplitude. 2. Glass prism.
3. Infrasonic waves. 4. Epididymis.

- (B) 1. Sound waves.
2. Amplitude of vibration of a sound source.
3. Sweet potatoes.

- (C) 1. 2m 2. 5 Hz 3. 10 m/sec.

- 3** (A) 1. transverse – centre of rarefaction
2. intensity – pitch
3. Prostate gland – cowper's gland
4. wave – periodic

- (B) 1. 10^{-5} Gigahertz 2. Ovary.
3. Scrotum.

(C) Angle of incidence is greater than angle of refraction.

- 4** (A) 1. four 2. violet
3. 120° 4. zygote

- (B) 1. Because dolphins produce ultrasonic waves, while the human ears can't hear sounds of frequencies more than 20 KHz.
2. Because their anthers and stigmas are not matured at the same time.
3. Because the light of lightning is electromagnetic waves, while the sound of thunder is mechanical waves, where the velocity of propagation of electromagnetic waves is much greater than the velocity of propagation of mechanical waves in air.

(C) Calyx – Corolla – Androecium – Gynoecium.

Sharkia Governorate

12 Science Inspectorate

- 1** (A) 1. four – amplitude.
2. testosterone – estrogen
3. high – low 4. calyx – androecium

- (B) 1. Sound waves. 2. White.
3. Stamen.

(C) Frequency

$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$

$$600 = \frac{300 \times \text{No. of gear teeth}}{30}$$

$$\text{No. of gear teeth} = \frac{600 \times 30}{300} = 60 \text{ teeth.}$$

- 2 (A) 1. b 2. d 3. c 4. b

- (B) 1. (✓) 2. (✓) 3. (✓)

(C) To attract insects to the flower, which help in the reproduction process.

- 3 (A) 1. Periodic motion. 2. Frequency.
3. Zygote. 4. Wavelength.

- (B) 1. Calyx 2. Violet
3. Hertz.

(C) It will reflect on itself.

- 4 (A) 1. Sound wave. 2. Palm tree.
3. Air. 4. Light wave.

- (B) 1. Because it does not permit light to pass through it.
2. To be easily carried for long distances by air.
3. Because it is responsible for movement of the sperm till it reaches the ovum.

- (C) 1. Head. 2. Midpiece.
3. Tail.

Menofia Governorate

13 El-Shohada Educational Zone

- 1 (A) 1. d 2. c 3. b 4. d
(B) 1. Trough. 2. Planck's constant.
3. Fertilization

- (C) 1. > 2. >

- 2 (A) 1. (✓) 2. (✗) 3. (✓) 4. (✗)

- (B) 1. electromagnetic – mechanical
2. refraction – normal 3. head – tail.

- (C) 1. Potatoes. 2. Mango trees.

- 3 (A) 1. The rotary bee.

The link of the rest words : oscillatory motions.

2. Water wave.

The link of the rest words : electromagnetic waves.

3. Sound speed.

The link of the rest words : properties of sound waves.

4. Measles.

The link of the rest words : sexually transmitted diseases.

- (B) 1. (2)

2. Angle of emergence = 50°

3. (1) : pollen tube. (2) : two male nuclei.

(C) Frequency

$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$

$$\text{Frequency} = \frac{300 \times 50}{60} = 250 \text{ Hz}$$

∴ Frequency

$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$

$$250 = \frac{\text{No. of cycles} \times 60}{90}$$

$$\text{No. of cycles} = \frac{250 \times 90}{60} = 375 \text{ cycles.}$$

- 4 (A) 1. longitudinal wave. 2. seven
3. decibel. 4. carpels only.

- (B) 1. It analysis the white light into 7 spectrum colours.

2. Carries the floral leaves.

3. Receiving the ripe ovum and pushing it towards the uterus.

- (C) 1. The testes. 2. The ovary.

Port Said Governorate

14 Port Said Educational Zone

- | | | | | |
|-------|-------|-------|-------|-------|
| 1. a | 2. c | 3. d | 4. b | 5. d |
| 6. c | 7. a | 8. b | 9. d | 10. d |
| 11. d | 12. d | 13. d | 14. d | 15. a |
| 16. a | 17. a | 18. c | 19. b | 20. a |
| 21. c | 22. a | 23. b | 24. d | 25. d |

26. The vibrational motion :

pendulum – tuning fork – spring – stretched string – swing.

The wave motion :

water waves – sound waves – light waves – infrared waves – radio waves.

27. a. Production of ova.
b. Production of female sex hormones.
28. Mirage phenomenon occurs.
29. This means that the maximum displacement achieved by the medium particles away from their rest positions equals 3 meters.
30. Formation of one seed in the fruit.
31. Optical density of the medium.
32. Wavelength decreases to its half value.
33. Pollination.
34. It analysis white light into seven spectrum colours.
35. The pitch of the produced tone decreases.

Kafr El-Sheikh Governorate

15 Science Inspectorate

- 1 (A) 1. c 2. d 3. c 4. a
(B) 1. Progesterone. 2. Periodic motion.
3. Pollination.
(C) 4 sec.

- 2 (A) 1. (x) 2. (x) 3. (x) 4. (✓)
(B) 1. It used to treat nervous tension by using cold mater.
2. It analysis the white light into seven spectrum colours.
3. It attracts insects to the flour, which help in the reproduction process.

(C) Frequency

$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$

$$600 = \frac{300 \times \text{No. of gear teeth}}{60}$$

$$\text{No. of gear teeth} = \frac{600 \times 60}{300} = 120 \text{ teeth.}$$

- 3 (A) 1. horizontal root – terrestrial stem.
2. wavelength – amplitude.
3. 23 – 46 (23 pairs) 4. higher – lower
(B) 1. Swing motion. 2. Sound wave.
3. A plane mirror.
(C) The sound intensity decreases to its quarter.

4 (A) 1. Drill.

The others produce musical tones.

2. Apricot the others are plants have many ovules gives a fruit with many seeds
3. Uterus.
The others are parts of male genital system.
4. 25 KHz.

The others are sonic waves.

- (B) 1. Because the voice of woman is high pitched while that of man is low pitched.
2. Because the angle of incidence = angle of reflection = zero.
3. Because the light of lightning is electromagnetic waves, while the sound of thunder is mechanical waves, where the velocity of propagation of electromagnetic waves is much greater than the velocity of propagation of mechanical waves in air.

(C) Medium (c)

Behira Governorate

16 Kafr El-Dawar Educational Zone

- 1 (A) 1. b 2. b 3. b 4. c
(B) 1. (x) by pulses as oscillatory motion.
2. (x) by attachment grafting.
3. (x) by decreasing its speed.
(C) 1. Letter N 2. Letter P

- 2 (A) 1. Measles, the rest of words are sexually transmitted diseases.
2. Wavelength, the rest of words are related to the energy of light photon.
3. Pollination, the rest of words are methods of artificial vegetative reproduction.
4. Sound wave, the rest of words are electromagnetic waves.
(B) 1. = 2. < 3. >
(C) The sperms do not reach the ripe ovum and the fertilization process not occur.

- 3 (A) 1. umbilical cord. 2. vacuum
3. quarter. 4. thickness.
(B) 1. androecium. 2. fruit.
3. insects

(C) Frequency

$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$

$$600 = \frac{300 \times \text{No. of gear teeth}}{60}$$

$$\text{No. of gear teeth} = \frac{600 \times 60}{300} = 120 \text{ teeth.}$$

- 4 (A) 1. c 2. e 3. a 4. b

- (B) 1. Infrasonic waves. 2. Jacuzzi.
3. Wavelength.

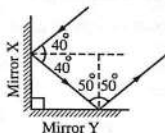
- (C) The different figure is number (3)

Fayoum Governorate
17 Science Inspectorate

- 1 (A) 1. electromagnetic – mechanical
2. inversely – directly
3. ♀ – ♂
4. Prostate – cowper's

- (B) 1. The ovary. 2. Sound waves.
3. Air.

- (C) 50°



- 2 (A) 1. perpendicular to 2. one.
3. ultrasonic 4. seed

- (B) 1. Frequency, the rest are factors affecting the sound intensity.
2. Measles, the rest are sexually transmitted diseases.
3. Amplitude, the rest are related to the law of wave propagation.

- (C) It is a process of multiplying a small part of a plant to get many identical parts.

- 3 (A) 1. Wave motion. 2. Oscillatory motion.
3. The testis. 4. The light refraction.

- (B) 1. 0.01 Hz 2. 2.4
3. 56 days.

- (C) Frequency

$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$

$$600 = \frac{300 \times \text{No. of gear teeth}}{60}$$

$$\text{No. of gear teeth} = \frac{600 \times 60}{300} = 120 \text{ teeth.}$$

- 4 (A) 1. a 2. a 3. a 4. a

- (B) 1. Due to the inability of the testes to produce sperms as a result of the rise in temperature of the body cavity by about 2 degrees above the optimum temperature of the production of sperms.

2. To attract insects to help in the reproduction process.

3. Because the angle of incidence = the angle of reflection = zero.

- (C) 1. The ovum is fertilized in fallopian tube No. (1).

2. The embryo is delivered to life through vagina No. (6).

Sohag Governorate
18 Akhmeem Educational Zone

- 1 (A) 1. longitudinal – crest 2. Sperm – ovum
3. Musical tones – noise
4. four – amplitude

- (B) 1. Maize. 2. Tuning fork motion.
3. Violet.

- (C) Frequency = $\frac{1}{T} = \frac{1}{0.2} = 5 \text{ Hz}$

$$V = F \times \lambda = 5 \times 2 = 10 \text{ m/sec.}$$

- 2 (A) 1. a 2. b 3. c 4. b

- (B) 1. Stem. 2. Wave pressure.
3. Wood.

- (C) Absolute refractive index

$$= \frac{\text{Velocity of light in air}}{\text{Velocity of light in glass}}$$

$$\text{Absolute of refractive index} = \frac{3 \times 10^8}{1.5 \times 10^8} = 2$$

- 3 (A) 1. Harmonic tones. 2. Periodic time.
3. Flower.
4. The angle of incidence.

- (B) 1. b 2. c 3. a

- (C) Frequency

$$= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$$

$$100 = \frac{30 \times \text{No. of gear teeth}}{60}$$

$$\text{No. of gear teeth} = \frac{100 \times 60}{30} = 200 \text{ teeth.}$$

- 4 (A) 1. (✗) 2. (✓) 3. (✓) 4. (✓)
 (B) 1. static 2. photons.
 3. longitudinal wave
 (C) 1. light refraction 2. 50°

Luxor Governorate

19 Esna Educational Zone

- 1 (A) 1. crests – troughs.
 2. pitch (frequency)
 3. Testosterone – estrogen
 4. calyx – sepal
 (B) 1. (✗) 2. (✓) 3. (✗)
 (C) $F = \frac{\text{No. of complete oscillations}}{\text{Time in seconds}} = \frac{240}{60} = 4 \text{ Hz}$

- 2 (A) 1. Flower. 2. Spectrum colors.
 3. Sound pitch. 4. Frequency.
 (B) 1. Stamen. 2. Water waves
 3. Rotary bee motion
 (C)

Points of comparison	The Sperm	The Ovum
• Size :	Small.	Relatively large.
• Number :	Large number.	One only.
• Motion :	Mobile.	Static.

- 3 (A) 1. a 2. b 3. c 4. d
 (B) 1. Sound wave. 2. palm trees.
 3. Flint glass.
 (C) To attract insects to help in the reproduction process.

- 4 (A) 1. refraction 2. Ultrasonic
 3. 5 4. terrestrial stem
 (B) 1. It analysis white light into 7 spectrum colours.
 2. It produces pollen grains inside the pollen chamber.
 3. Transferring sperms from the testes to the urinary genital duct.
 (C) 1. Decibel. 2. Watt/m².

South Sinai Governorate

20 Science Inspectorate

- 1 (A) 1. oscillatory – periodic.
 2. compressions – rarefactions.
 3. 1 to 4 days – 2 to 3 weeks.
 4. four – pollen grains.
 (B) 1. (✗) 2. (✗) 3. (✓)
 (C) Less than.
 2 (A) 1. Wavelength, the rest are properties of oscillatory motion.
 2. Measuring pressure, the rest are uses of ultrasonic waves.
 3. Pollination, the rest are methods of artificial vegetative reproduction.
 4. Epididymis, the rest are parts of the sperm.

- (B) 1. a 2. c 3. b
 (C) Absolute refractive index
 $= \frac{\text{Velocity of light in air}}{\text{Velocity of light in glass}} = \frac{3 \times 10^8}{2 \times 10^8} = 1.5$

- 3 (A) 1. quarter 2. increases.
 3. seven 4. sweet potatoes.
 (B) 1. d 2. a 3. b
 (C) Frequency
 $= \frac{\text{No. of cycles} \times \text{No. of gear teeth}}{\text{Time in seconds}}$
 $200 = \frac{60 \times \text{No. of gear teeth}}{60}$
 $\text{No. of gear teeth} = \frac{200 \times 60}{60} = 200 \text{ teeth.}$

- 4 (A) 1. Complex tone.
 2. The angle of emergence.
 3. Seminal fluid. 4. Wave.
 (B) 1. Because the ovary of peach fruit contains only one ovule, while the ovary of pea plant contains more than one ovule.
 2. Mechanical waves need a medium like air or water to propagate through. Electromagnetic waves do not need a medium to propagate, where they propagate through vacuum.
 3. Periodic time = $4 \times 0.2 = 0.8 \text{ sec.}$
 (C) 50°

حمل الآن

مجانا وحصريا

امتحانات رقم (3)

الترم الثاني



Final Examinations of some Governorates



2023

1 Cairo Governorate

East Nasr Educational Zone

Answer the following questions :

Question 1

A Complete the following sentences :

1. The measuring unit of sound intensity is , while the measuring unit of noise intensity is
2. Waves are classified according to the ability to propagate and transfer energy into and
3. The outer whorl of the flower is called , each leaf is called
4. Frequency of sonic waves ranges between Hz and Hz.

B Mention the function of each of the following :

1. Jacuzzi.
2. Testes.
3. Savart's wheel.
4. Corolla.

C Sound waves have frequency 400 Hz in air and its wavelength is 85 cm. Calculate the velocity of these waves.

Question 2

A Write the scientific term :

1. The fusion of the male cell (pollen grain) with female cell (ovum).
2. The changing of light ray path when moving from a transparent medium to another transparent medium.
3. It is an external factor that affects the ear causing the sense of hearing.
4. The maximum displacement done by the oscillating body away from its original position.

B Cross out the odd word then write the scientific term for other :

1. Cutting – Pollination – Layering – Grafting.
2. Red – White – Yellow – Orange.
3. Reed pipe – Drill – Piano – Violin.
4. Pendulum motion – Spring motion – Rotary bee motion – Stretched string motion.

C Give reason for : The energy of red light photon is less than that of orange photon.

Question 3

A Choose the correct answer :

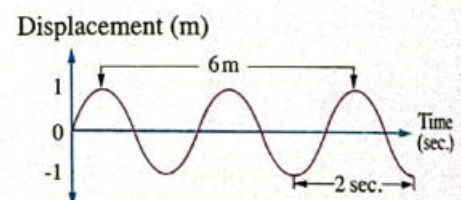
- All of the following factors are affecting sound intensity, except
 a. amplitude. b. frequency. c. medium density. d. wind direction.
- The highest point of the particles of the medium in the transverse wave is known as the
 a. crest. b. compression. c. rarefaction. d. trough.
- The floral whorl which is not found in the female flower is
 a. calyx. b. androecium. c. corolla. d. gynoecium.
- The amplitude of the harmonic tone is that of fundamental tone.
 a. smaller than b. larger than
 c. equal to d. (a) and (b) are correct

B Correct the underlined words :

- The trough of the transverse wave is equivalent to the center of compression of the longitudinal wave.
- The male gamete contains quarter of the genetic material.
- In regular reflection : the angle of incidence is more than the angle of reflection.
- When a beam of light falls inclined from air to water, the angle of incidence is equal to the angle of refraction.

C From the opposite figure calculate :

- Wavelength.
- Frequency.
- Amplitude.



Question 4

A Put (✓) or (✗) and correct the wrong ones :

- Sound velocity through liquids is more than that through gases. ()
- The anthers of air pollinated flowers are feathery like and sticky. ()
- As optical density of the medium increases, the speed of light through it increases. ()
- The wavelength for a longitudinal wave is the distance between the center of first crest and the center of second crest. ()

B Compare between each of the following :

- Sperm – Ovum (size of them).
- The mechanical – Electromagnetic waves (speed of them).

C What happen when a light ray falls perpendicular on a reflecting surface ?

2 Cairo Governorate

El Nozha Educational Zone

Answer the following questions :

Question 1

A Complete the following sentences :

1. The simple harmonic motion is an example of the
2. waves need a medium to propagate.
3. Savart's wheel is used to determine the of unknown sound tone.
4. Angle of is the angle between the refracted light ray and the normal at the point of incidence on the separating surface.

B Put (✓) or (✗) :

1. The corolla consists of bright colored scented leaves. ()
2. The ovum is mobile of a relatively large size. ()
3. The absolute refractive index of any transparent medium is always greater than one. ()
4. Amplitude of a wave is the time taken for one wave. ()

C What happens when a light ray falls perpendicular on a reflecting surface ?

Question 2

A Choose the correct answer :

1. In reflection, the reflected light rays are reflected in many directions.
a. irregular b. uniform c. regular d. total internal
2. All the following effect on sound intensity, except
a. amplitude. b. medium density. c. wind direction. d. frequency.
3. The maximum displacement achieved by oscillating body away from its rest position is called
a. frequency. b. amplitude. c. periodic time. d. complete oscillation.
4. All of the following are organs of male reproductive system, except
a. vas deferens. b. uterus. c. testes. d. penis.

B Choose from column (B) & (c) what suit them in column (A) :

(A) Floral whorl	(B) Consists of	(C) Function
1. Calyx	A. stamens	a. male organ of the flower.
2. Corolla	B. sepals	b. female organ of the flower.
3. Androecium	C. carpels	c. protect the inner parts of the flower.
4. Gynoecium	D. petals	d. attract insects to the colored leaves.

C Give reason for : The oscillatory is considered as a periodic motion.

Question 3**A** Correct the underlined words :

1. Light wave and sound wave are electromagnetic waves.
2. Rotary bee and tuning fork produce oscillatory motion.
3. Piano and drill produce musical tones.
4. Ovary, fallopian tube, uterus and testes are components of female reproductive system.

B Cross out the odd word, then write the relation between the rest of words :

1. Stigma – Stamen – Style – Ovary.
2. Mirror – Stainless sheet – Foil paper – Leaf.
3. Tuning fork – Simple Pendulum – Spring – Water.
4. Red – Orange – Yellow – Black.

C What is the function of vas deferens ?**Question 4****A** Write the scientific term :

1. Changing the path of light rays when travel from a transparent medium to another transparent medium of different optical density.
2. Sound waves frequencies less than 20 Hz.
3. The angel between the emergent light and the normal line at the point of emergence on the interface.
4. It is the area of the lowest density and pressure in the longitudinal wave.

B Rearrange the following according to which between brackets :

1. Corolla – Calyx – Carpel – Stamen. (from outer to inner)
2. Red – Yellow – Green – Orange. (splitting light from lowest frequency to the highest)
3. Water – Wood – Air – Carbon dioxide. (descending order according to sound velocity)
4. Urethra – Epididymis – Vas deferens – Testes.
(the path of the sperms from the beginning of its formation)

C Calculate the frequency of a simple pendulum which makes 720 complete oscillation in 90 second.**3 Cairo Governorate****Heliopolis Educational Zone**

Answer the following questions :

Question 1**A** Complete the following sentences :

1. The complete oscillation includes successive maximum displacements, each one is called
2. Sound waves propagate through the medium as spheres of and

3. There are two kinds of reproduction in plants, which are reproduction and reproduction.
4. The crest in the wave is equivalent to the in the longitudinal wave.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Light waves are	a. produces the ovum.
2. The male flower consists of	b. periodic motion.
3. Ovary	c. 3 whorls.
4. Wave motion is a kind of	d. electromagnetic transverse.

C Problem : Savart's wheel rotates with a rate of 300 cycles per minute. A sound of frequency 600 Hz is produced when an elastic plate touches the teeth of one gear. Calculate the number of teeth of the gear.

Question 2

A Write the scientific term :

- One of the components of the electromagnetic spectrum of wavelength ranges between 380 : 700 nanometers.
- The angle between the incident light ray and the normal at the point of incidence on the separating surface.
- Short stem where leaves developed and modified into reproductive organs.
- The periodic motion made by a body around its position of rest, where the motion is repeated equal intervals of time.

B Mention one importance of each of the following :

- Androecium.
- Hot water in jacuzzi.
- Glass prism.
- The tail of a sperm.

C Arrange the floral whorls from outside to inside :

(Corolla – Gynoecium – Androecium – Calyx).

Question 3

A Put (✓) or (✗) in front of each of the following statements then correct the wrong :

- Man can't reproduce asexually. ()
- The motion of stretched string is a wave motion. ()
- In uniform reflection, the light rays are reflected directly in one direction. ()
- Crest is the highest point of the particles of the medium in the transverse wave. ()

B Correct the underlined words :

1. Light reflects when it travels from a transparent medium to another one of different optical density.
2. The kinetic energy of the simple pendulum decreases by increasing its velocity.
3. Zygote carries half number of chromosomes.
4. Violet has lowest frequency and longest wavelength.

C Give reasons for : The light ray that falls perpendicular on a glistening surface reflects on itself.**Question 4****A Choose the correct answer :**

1. Sound of frequency 200 Hz is than the sound of frequency 100 Hz.
a. stronger b. sharper c. weaker d. harsher
2. The ability of the transparent medium to refract the light is called the of the medium.
a. refractive index b. density c. optical density d. viscosity
3. All of the following waves propagate through vacuum, except waves.
a. light b. radio c. sound d. infrared
4. Inflorescence is a group of on a floral axile.
a. fruits b. leaves c. seeds d. flowers

B Cross out the odd word, then link between the rest words :

1. Head – Tail – Midpiece – Cytoplasm.
2. Stigma – Stamen – Style – Ovary.
3. Yellow – Blue – White – Red.
4. Pendulum – Tuning fork – Spring – Water wave.

C What happens to the ovary in a plant after fertilization.**4****Cairo Governorate**

Shubra Educational Zone

Answer the following questions :

Question 1**A Complete the following sentences :**

1. The transverse wave consists of and
2. The frequency of sonic waves range between Hz and Hz.

3. The hormones in male and hormones in females are responsible for the appearance of secondary sexual characters.
4. The frequency of 540 oscillations in one minute is and periodic time is

B Put (✓) or (✗) :

1. The simple harmonic motion is considered the simplest form of oscillatory motion. ()
2. Sound intensity decreases when it touches a resonance box. ()
3. Vegetative reproduction is a type of sexual reproduction. ()
4. The pregnancy in human beings takes about 9 months. ()

C What happens when a light ray falls perpendicular on a reflecting surface ?

Question 2

A Write the scientific term :

1. The ability of the medium to refract the light.
2. The maximum displacement done by oscillating body away from its rest position.
3. The property by which ear can differ between two sounds even have same pitch and intensity.
4. Short stem where the leaves developed modified into reproductive organs.

B Cross out the odd word :

1. Seminal vesicles – Prostate gland – Pancreas gland – Cowper's gland.
2. Pendulum motion – Spring motion – Rotary bee motion – Stretched string motion.
3. Red – Orange – Black – Violet.
4. Calyx – Corolla – Stamen – Testes.

C Give reason for : Palm flowers are unisexual.

Question 3

A Correct the underlined words :

1. The distance between the first crest and third crest of a wave is 20 cm, so the wave length of this wave is 20 cm.
2. The ovum consists of head, middle part and tail.
3. The angle of incidence is greater than the angle of reflection.
4. The transitional motion is the motion repeated through equal intervals of time.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Triangular prism	a. is the disturbance that propagates and transfers energy in direction of propagation.
2. The wave	b. break down stones of kidney and ureter.
3. Ultrasonic waves	c. is the cell resulting from fusion of pollen grain and an ovum nuclei.
4. The zygote	d. is used in the analysis of light.

C Problem :

Calculate the frequency of a musical tone similar to the tone production from Savart's wheel rotating with a velocity of 960 cycle in 120 seconds, knowing that the number of gear teeth is 30 teeth.

Question 4

A Choose the correct answer :

- The measuring unit of noise intensity is
a. Decibel. b. Hz. c. Watt/m². d. Meter.
- Pollination in coloured and scented flowers often takes place by
a. insects. b. man. c. water. d. air.
- All of the following are electromagnetic waves, except waves.
a. light b. sound c. radio d. infrared
- The absolute refractive index of any material is always one.
a. more than b. less than c. equal to d. (a and b)

B Give one example for :

- Longitudinal wave.
- Fruit has single seed.
- Color that has highest frequency.
- Female reproductive organ which produce ova.

C Mention the function for calyx of the flower.

5 Cairo Governorate

El Sayeda Zeinab Educational Zone

Answer the following questions :

Question 1

A Complete the following sentences :

- The complete oscillation includes displacements each of them is called
- After fertilization in plants, the ovary changes into while the ovule changes into

3. In light reflection, angle of = angle of
 4. Voice of women has pitch, while voice of men has pitch.

B Correct the underlined words :

1. Light travels in curved lines.
2. Palm trees have bisexual flowers.
3. The highest point in transverse wave is called compression.
4. The tuber may be a stem as in sweet potatoes.

C What happens when the distance between the sound source and the ears increases to double ?

Question 2

A Write the scientific term :

1. It is the process of transfer of pollen grains from the anther of flower to stigma of the same flower.
2. A medium doesn't allow light rays to penetrate through.
3. The motion which is regularly repeated in equal periods of time.
4. Short stem whose leaves are modified into reproductive organs.

B Cross out the odd word :

1. Water waves – Radio waves – Light waves – Infrared waves.
2. Calyx – Corolla – Stamen – Testes.
3. Glass – Water – Air – Wood.
4. Frequency – Wavelength – Displacement – Wave velocity.

C Give reason for : The petal of corolla are coloured and scented.

Question 3

A Choose the correct answer :

1. White light consists of spectrum colours.
 a. nine b. eight c. seven d. six
2. The consists of filament and anther.
 a. carpel b. stamen c. sepal d. petals
3. The ovary in female human releases one ripe ovum every days.
 a. 14 b. 28 c. 34 d. 56
4. The green leaves surrounding the flower are
 a. carpels. b. stamens. c. sepals. d. petals.

B Put (✓) or (✗) :

1. Fundamental tone's intensity is lower than harmonic tone. ()
2. The absolute refractive index of any medium is always less than one. ()
3. The carpel of flower consists of filament and anther. ()
4. The measuring unit of sound intensity is watt/m². ()

C Calculate the frequency of an emitted tone using Savart's wheel rotated with velocity of 960 cycle in 2 minutes, given that the number of teeth of the gear is 30 teeth.

Question 4

A Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Testes	a. the number of complete oscillations in one second.
2. Frequency	b. the ability of medium to refract light.
3. Fertilization	c. produce one ripe ovum every 28 days.
4. Optical density	d. produce the sperms.
	e. results in formation of zygote.

B Compare between :

1. Sperms and ova in terms of (size and number).
2. Sound waves and light waves (speed and type of waves).

C Calculate the frequency of a body makes 240 complete oscillations in one minute.

6

Cairo Governorate

Agoza Educational Zone

Answer the following questions :

Question 1

A Complete the following sentences :

1. Testes produce and secrete hormone.
2. The measuring unit of sound intensity is while that of the noise intensity is
3. The angle of incidence the angle of reflection.
4. The crest in the wave is equivalent to the in the longitudinal wave.

B Put (✓) or (✗) :

1. The sound velocity through solids is less than that through liquids. ()
2. Each ovary produces only one ovum every 28 days in exchange with other ovary. ()
3. The typical flower contains three whorls. ()
4. The velocity of the oscillating body is maximum when passing at rest position. ()



- C Calculate the periodic time for an oscillating body that makes 300 complete oscillations in half a minute.

Question 2

- A Choose the correct answer :

- The flower is a modified
a. stem. b. leaf. c. root. d. branch.
- hormone is responsible for the continuity of pregnancy.
a. Testosterone b. Estrogen c. Thyroxin d. Progesterone
- The result of multiplying frequency of body by its periodic time equals
a. 1 b. 0.5 c. 0.1 d. 4
- The human ear can hear sounds of frequency
a. 50 KHz. b. 30 KHz. c. 300 Hz. d. 10 Hz.

- B Correct the underlined words :

- The stamen consists of stigma, style and ovary.
- The motion of tuning fork is a wave motion.
- The sound intensity decreases by increasing the density of the medium.
- The absolute refractive index of any transparent material is always smaller than one.

- C Compare between the sperm and the ovum (in terms of number – size – motion).

Question 3

- A Give reasons for :

- The piano sound differs from that of violin even if they the same pitch and intensity.
- Palm flower are unisexual.
- Ultrasonic wave are used in sterilizing the food.
- The periodic time decreases as the number of complete oscillation increases.

- B Cross out the odd word :

- Water wave – Radio wave – Light wave – Sound wave.
- Prostate – Fallopian tube – Uterus – Ovary.
- Sepals – Petals – Tubers – Carpels.
- Red light – Green light – Blue light – White light.

- C If the frequency of the sound produced when a metallic plate touches a gear in a Savart's wheel is 100 Hz, calculate the number of the gear teeth if the wheel rotates with speed 200 cycles/minute.

Question 4**A** Write the scientific term :

1. The distance covered by the wave in one second.
2. The ability of a transparent medium to refract the light.
3. The fusion of the male gamete with the female gamete.
4. A property by which the ear can distinguish between harsh and sharp voice.

B What are the results of the following ... ?

1. The particles of the medium vibrate a long direction as the wave propagation.
2. A light ray falls perpendicular on a reflection surface.
3. The ovary of the plant after fertilization.
4. When a pollen grain fall on the stigma of a flower.

C What is the important of glass prism.**7****Giza Governorate****El Shiekh Zayed Educational Zone**

Answer the following questions :

Question 1**A** Choose the correct answer :

1. is the maximum displacement of medium particles away from its original position.
a. Wavelength b. Amplitude c. Frequency d. Velocity
2. All of the following are characteristics of red light, except
a. it has the lowest frequency. b. its photon has the highest deviation.
c. its photon energy is the smallest. d. it has the longest wavelength.
3. The time taken by an oscillating body to make one complete oscillation is known as
a. periodic time. b. amplitude. c. frequency. d. complete oscillation.
4. There outer whorl of the flower is
a. gynoecium. b. androecium. c. corolla. d. calyx.

B Complete the following sentences :

1. motion and motion are two types of periodic motion.
2. The voice of lion is pitch while the voice of sparrow is pitch.
3. In the flower, produce pollen grains while produce ovules.
4. Testosterone is a hormone, secreted by

C What happens when you look at a pencil partially immersed in a cup of water and Why ?

Question 2

A Put (✓) or (✗) and correct the wrong ones :

1. Periodic motion is the type of motion regularly repeated in equal periods of time. ()
2. The wavelength of light is the distance covered by light in one second. ()
3. The angle of incidence = The angle of reflection. ()
4. The female genital system consists of ovaries, fallopian tube, uterus and penis. ()

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Simple pendulum is example	a. high pitched sound.
2. Man sound is example of	b. bisexual flower.
3. Tulip is a	c. oscillatory motion.
4. Fallopian tube	d. receive the ovum.
	e. low pitched sound.

C Mention one example for the following :

1. Male hormone.
2. Female genital organ.
3. Unisexual plant.

Question 3

A Complete the following sentences by using words from the brackets :

(ultrasonic – two – simple harmonic – sonic – fertilization)

1. The motion is considered by simplest form of oscillatory motion.
2. If an oscillating body makes 20 complete oscillations in 10 seconds, its frequency equals Hertz.
3. are sound waves of frequencies ranging from 20 to 20000 Hertz.
4. is the process of fusion of the nucleus of the male cell with the nucleus of the female cell to form a zygote.

B Correct the underlined words :

1. Progesterone hormone is secreted by testes.
2. Light reflection is the change of light path when it passes through two different media.
3. White light is splitted into ten spectrum colors.
4. Electromagnetic waves are waves that need a medium to propagate through.

C Solve the problem if the frequency of sound produced from Savart's wheel is 1000 Hertz, when the metallic plate touches the teeth of a certain gear, find the number of teeth of such gear if the wheel makes 250 rotations in one and half minutes.

Question 4**A** Cross out the odd word :

1. Sepals – Petals – Tubers – Carpel.
2. Sound waves – Light waves – Radio waves – Infrared.
3. Red – Orange – Yellow – Black.
4. Stigma – Stamen – Style – Ovary.

B Write the scientific term :

1. The measuring unit of frequency.
2. A property by which the ear can distinguish between rough and sharp voices.
3. A pear shaped hollow organ in the female genital system.
4. A tube that helps to transfer the sperms from testes to urethra.

C Give reasons for : The petals of corolla are colorful and scented.**8****Giza Governorate****6th of October Educational Zone**

Answer the following questions :

Question 1**A** Complete the following sentences :

1. After fertilization, the ovary grows forming the while the ovule converts into the
2. Sound waves are waves, while light waves are waves.
3. Frequency \times periodic time =
4. The crest in transverse wave equivalent to in longitudinal wave.

B What is the function of ... ?

- | | |
|----------------------------|-------------|
| 1. Triangular glass prism. | 2. Jacuzzi. |
| 3. Ultrasonic waves. | 4. Corolla. |

C Calculate the frequency of musical tone similar to the frequency of a produced tone using Savart's wheel rotated with 180 cycle in time one minutes, given that the number of teeth of gear is 15 teeth.**Question 2****A** Choose the correct answer :

1. The angle of incidence = if the angle of reflection = 50° .
 a. 100° b. 50° c. 90° d. 40°

2. Fertilization occurs when is formed.
 a. sperm b. zygote c. ovum d. endometrium
3. The energy of photon = Planck's constant \times
 a. frequency. b. amplitudes. c. wavelength. d. speed.
4. The hormone in males is responsible for the appearance of secondary sex characters.
 a. testosterone b. progesterone c. insulin d. estrogen

B Give reasons for :

1. Seeing lightning before hearing thunder.
2. Rotary bee is a periodic motion can't be considered as oscillatory motion.
3. The incident light ray which falls perpendicular on a reflecting surface, reflects on itself.
4. The energy of red light photon is less than that of violet light photon.

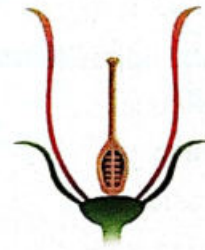
C Mention the sex of each of the following :



(1)



(2)



(3)

Question 3

A Write the scientific term :

1. Short stem where the leaves developed and modified into reproductive organs.
2. Number of complete oscillations made by an oscillating body in one second.
3. Two tubes of funnel shaped opening provided with finger like projections and lined with cilia.
4. An external factor which affects the ear causing the sense of hearing.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Sound pitch depends on	a. 4
2. White light consists of spectrum colours equals	b. unisexual plant.
3. A complete oscillation consists of number of amplitudes equal	c. frequency.
4. Palm tree is an example of	d. 7
	e. hermaphrodite.

- C** Calculate the absolute refractive index of diamond given that the velocity of light through it is 1.25×10^8 m/s, knowing that the velocity of light through air is 3×10^8 m/s.

Question 4

- A** Put (✓) or (✗) :

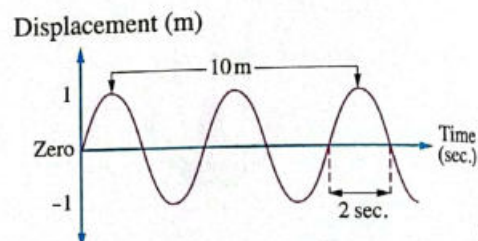
1. Man sound is harsh and rough, while woman is sharp. ()
2. Sperm from static cells. ()
3. The measuring unit of the noise intensity is Decibel. ()
4. The speed of pendulum reaches maximum at rest position. ()

- B** Cross out the odd word :

1. Movement of pendulum – Movement of Earth around Sun – Fan movement – Rotary bee movement.
2. Grafting – Cutting – Pollination – Tissue culture.
3. 20 Hertz – 5 Hertz – 100 Hertz – 200 Hertz.
4. Distance – Amplitude – Density of medium – Energy of photon.

- C** From the opposite figure calculate :

1. Amplitude.
2. Wavelength.
3. Periodic time.



9 Alexandria Governorate

East Educational Zone

Answer the following questions :

Question 1

- A** Complete the following sentences :

1. Kinetic energy is proportional to body velocity.
2. need a medium to propagate.
3. is the measuring unit of frequency.
4. is a pear-shaped hollow organ found in the pelvic cavity of a female's body.

- B** Write the scientific term :

1. The motion which is regularly repeated in equal periods of time.
2. It is the distance covered by light in one second.
3. A muscular tube between the uterus and the external genital opening.
4. It's the transfer of pollen grains from the anthers of a flower to stigmas of the same flower.

- C** Mention one use of ultrasonic waves in the medical field.



Question 2

A Choose the correct answer :

1. It is the highest point of the particles of the medium in the transverse wave
a. trough. b. crest. c. top of the wave. d. wave line.
2. The motion that is regularly repeated in equal periods of time is called motion.
a. wave b. regular c. oscillatory d. periodic
3. If the frequency of an oscillating body is 5 Hz, then its periodic time equals
a. 50 sec. b. 5 sec. c. $\frac{1}{5}$ sec. d. $\frac{5}{1}$ sec.
4. Its function is to protect the inner parts of the flower
a. calyx. b. corolla. c. stem. d. androecium.

B Put (✓) or (✗) :

1. The corolla consists of a group of colorful and scented petals. ()
2. The human ear can hear ultrasonic waves. ()
3. Sound waves consist of compressions and rarefactions. ()
4. The gynoecium consists of a group of carpels. ()

C What are the functions of ovaries in human ?

Question 3

A Mention one example for the following :

1. Oscillatory motion.
2. Mechanical wave.
3. Infrasonic waves.
4. Method of mixed pollination.

B Correct the underlined for each statement to give the right scientific fact :

1. The measuring unit of wavelength (λ) is a kilogram.
2. The velocity of sound waves through air = 1850 m/s.
3. Based on the law of light reflection, the angle of incidence is bigger than the angle of reflection.
4. The stem is a swollen part that carries the floral leaves.

C Compare between transverse and longitudinal waves regarding composition and example for each type.

Question 4

A Cross out the odd word :

1. Clear glass – Air – Pure water – Wood.
2. Red – Green – Black – Yellow.
3. Tuning fork – Spring – Pendulum – The bee toy.
4. Testes – Ovaries – Uterus – Vagina.

B Complete the following sentences from the given brackets :

1. is used for detecting the sex of the embryo.
(Ultrasonic waves – Infrasonic waves)
2. The sound pitch depends on
(frequency. – intensity.)
3. Frequency is proportional to periodic time.
(inversely – directly)
4. The distance covered by sound waves in one second is called
(sound velocity. – sound pitch.)

C Calculate periodic time and frequency for an oscillating body that makes 300 complete oscillations in half a minute.

10 Alexandria Governorate

Borg El-Arab Educational Zone

Answer the following questions :

Question 1

A Complete the following sentences :

1. The velocity of the oscillating body reaches its maximum value when it passes through its
2. Radio waves are considered as waves.
3. Savart's wheel is used to determine the of unknown sound tone.
4. A number of flowers are grouped together on the floral axle to form

B Put (✓) or (✗) :

1. The pregnancy period in human beings takes 20 weeks. ()
2. Palm trees are pollinated by air. ()
3. When light ray travels from air to water, the angle of incidence is greater than the angle of refraction. ()
4. 3 nanometers = 300×10^{-11} meter. ()

C Find the number of rotations in 2 minutes made by Savart's wheel producing sound of frequency 300 Hz. If the metallic plate touches one gear of 100 teeth.

Question 2

A Write the scientific term :

1. The highest point of the particles of the medium in the transverse wave.
2. A tone of regular frequency that is produced from the reed pipe.
3. The amount of light falling perpendicular to a unit area of a surface in one second.
4. The male reproductive organ in plants.

B Correct the underlined words :

1. The maximum displacement achieved by the oscillating body away from its rest position is frequency.
2. When the distance between the source of light and surface decreases to its half value, the light intensity of the surface increases to double.
3. The outer whorl of the flower is called petal.
4. In human, the fertilized egg is implanted in the lining of cervix.

C Give reason for : Auto (self) pollination can't happen in sunflower plant.**Question 3****A** Choose the correct answer :

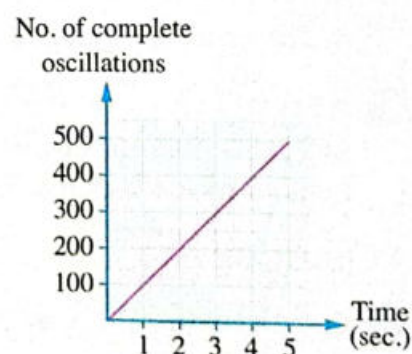
1. The property by which the ear can distinguish between rough and soft voices is
a. noise. b. sound pitch. c. sound intensity. d. sound quality.
2. The number of waves produced in one second is called
a. frequency. b. amplitude. c. velocity. d. periodic time.
3. Which one of the following doesn't permit the passage of light through it ?
a. Air. b. Clear water. c. Flint glass. d. Black honey.
4. All of the following are ways of artificial vegetative reproduction, except
a. grafting. b. tissue culture. c. corms. d. cutting.

B Mention the unit used in measuring ...

1. Wave frequency.
2. Sound intensity.
3. Level of sound intensity. (noise intensity)
4. Wavelength.

C What happens when a light ray falls perpendicular to the interface between two transparent media of different optical density ?**Question 4****A** The opposite graph shows the relation between the number of complete oscillations (N) made by an oscillating body and the time (T) in seconds. From the graph find :

1. The number of complete oscillations made by the oscillating body after 4 seconds.
2. The time in which the oscillating body makes 200 oscillations.
3. The frequency of the oscillating body.
4. The periodic time.



B Mention the function of the following :

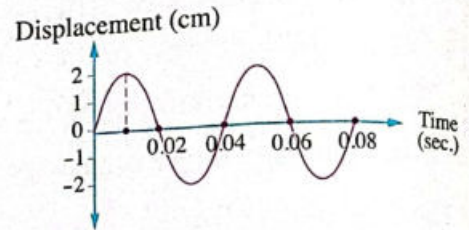
1. Corolla.

2. Two ovaries in human female.

3. Ear plugs.

4. Jacuzzi.

C The opposite figure shows the relation between the displacement and the time in a transverse wave that takes place in water with velocity 20 m/sec.



1. Amplitude.

2. Frequency.

3. Wavelength.

11 Qalyoubia Governorate

Official Language Schools Administration

Answer the following questions :

Question 1

A Choose the correct answer :

1. If the frequency of an oscillating body is 8 Hz, the periodic time is

a. 8 sec.

b. $\frac{1}{8}$ sec.

c. 1 sec.

d. 2 m.

2. Sound of frequency 300 Hz is than the sound of frequency 200 Hz.

a. stronger

b. sharper

c. weaker

d. harsher

3. The floral whorl, which is absent (not found) in the male flower is the

a. calyx.

b. corolla.

c. androecium.

d. gynoecium.

4. All the following are factors affecting sound intensity, except

a. amplitude of vibration.

b. medium density.

c. frequency.

d. wind direction.

B Correct the underlined words :

1. The distance covered by the wave in one second is called wavelength.

2. The measuring unit of sound intensity is m/sec.

3. The light is a mechanical transverse wave.

4. The bract is a group of flowers carried on the same axle.

C A Savert's wheel rotates with a rate of 300 cycles in a half minute, a sound of frequency 600 Hz is produced when an elastic plate touches the teeth of one gear, calculate the number of teeth of that gear.

Question 2

A Complete the following sentences :

1. Rough tones have frequencies, while sharp tones have frequencies.



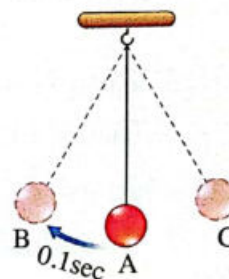
2. The crest in the wave is equivalent to the in the longitudinal wave.
3. The is the first whorl of the floral leaves, while is the third whorl of the floral leaves.
4. The hormone in males and hormone in females are responsible for the appearance of secondary sexual characters.

B Cross out the odd word :

1. Fallopian tubes – Scrotum – Vas deferens – Testes.
2. Sound wave – Light wave – Radio wave – Infrared wave.
3. Yellow – Blue – White – Violet.
4. Stigma – Stamen – Style – Ovary.

C In the opposite figure, when the ball of pendulum moves from (B) to (C) a displacement of (2cm) from the figure, Find :

1. The amplitude.
2. Periodic time.
3. The frequency.



Question 3

A Complete the following sentences using words from brackets :

(anther – electromagnetic waves – sound pitch – straight – sound intensity)

1. Light travels in lines.
2. it is the property by which the ears can distinguish (differentiate) between harsh and sharp voices.
3. Radio waves are considered as
4. Pollen grains are small cells formed in the inside pollen chamber.

B Put (✓) or (✗) :

1. After completing of the fertilization process the ovary in plants develops to become a fruit. ()
2. A vibrating body makes $\frac{1}{4}$ complete vibration in $\frac{1}{64}$ sec, its frequency is 6 Hz. ()
3. Sound velocity through gases is more than that through liquids. ()
4. Typical flower contains four floral whorls. ()

C Give an example for each of the following :

1. The unisexual flower.
2. The sound of high pitch (sharp).
3. The highest spectrum colour in frequency (deviation).

Question 4

A Write the scientific term :

1. A new method of vegetative reproduction to produce large numbers of plants from a small part of it.
2. Angle of incidence = Angle of reflection.
3. It is the motion, which is regularly repeated in equal periods of time.
4. Two glands of oval shape that produce male cells (gametes) in human.

B What happens ... ?

1. When the pollen grain transfers from the anther of a flower to the stigma of the same flower in the same plant.
2. If the distance between the sound source and the ears increases to double.
(Concerning the sound intensity)
3. When the two vas deferens were cut.
4. The light ray falls perpendicular (normally) on a reflecting surface.

C What is meant by ... ?

1. The fertilization process in plants.
2. Ultrasonic waves.
3. The light refraction.

12

Sharkia Governorate

Science Inspectorate

Answer the following questions :

Question 1

A Write the scientific term :

1. The ability of the medium to refract light rays.
2. The reproduction of some plants by parts of the roots or stems.
3. The periodic motion made by a body around its point of rest.
4. Distance covered by the wave in one second.

B Put (✓) or (✗) :

1. In irregular reflection, the reflected rays are reflected in many directions. ()
2. Wavelength is directly proportional with frequency. ()
3. The two ovaries in the female produce the progesterone hormone. ()
4. Reproduction by grafting can occur between orange and peaches. ()

C Calculate the frequency of a musical tone similar to the frequency of a produced tone using Savart's wheel rotated with a speed of (360) cycles in minute, given that the number of teeth of the gear is (60) teeth.



Question 2

A Complete the following sentences :

1. Transverse wave consists of and
2. The floral leaves of calyx have color and each one is called
3. color is the lowest in frequency, while color is the lowest in the wavelength.
4. The human zygote results from the fusion of and

B Correct the underlined words :

1. The intensity of sound is measured in hertz.
2. If the vertical distance between the crest and the trough is 40 cm, so the wave amplitude is 15 cm.
3. The sperm contains a quarter of the genetic material.
4. Natural vegetative reproduction is carried out in potatoes by corns.

C Give reason for : Auto pollination can't happen in sunflower plant.

Question 3

A Cross out the odd word, then write the relation between the rest :

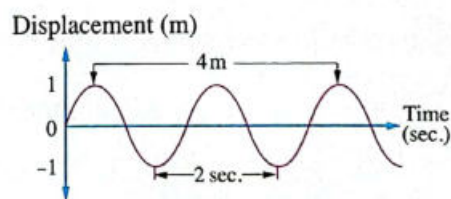
1. Spring – Rotary bee – Simple pendulum – Tuning fork.
2. Sound wave – Light wave – Radio wave – Infrared wave.
3. Blue – Red – Yellow – White – Violet.
4. Layering – Cutting – Pollination – Grafting.

B Complete the following :

1. From the opposite figure :

- a. Wavelength = m.
- b. Periodic time = sec.
- c. Wave speed = m/s.

2. Multiplying periodic time and frequency equals



C Calculate the absolute refractive index of glass if the speed of light in air and glass respectively are (3×10^8) m/s and is (2×10^8) m/s.

Question 4

A Choose the correct answer :

1. The light ray refracts the normal when it travels from glass to air.
 - a. near to
 - b. away from
 - c. perpendicular to
 - d. along
2. The time of amplitude is equivalent to periodic time.
 - a. quarter
 - b. half
 - c. double
 - d. three times

3. The sound of frequency 200 Hz is than the sound of frequency 100 Hz.
 a. stronger b. sharper c. weaker d. harsher
4. The right ovary in female produces a ripe ovum every days.
 a. 28 b. 56 c. 23 d. 46

B Mention one function of :

1. Corolla. 2. Testes in human male.
 3. Glass prism. 4. Jacuzzi.

C What is meant by angle of emergence in a prism is 43° ?

13

Gharbia Governorate

Science Inspectorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. The measuring unit of sound intensity is , while that of noise intensity is
2. The tuber is a as sweet potatoes or a as potatoes.
3. A simple pendulum makes 300 complete oscillations in a minute, so its periodic time is sec.
4. Waves are classified according to the direction of vibration of medium particles relative to the direction of wave propagation into and

B Look at the opposite figure, then answer the following questions :



1. Mention the method of reproduction.



2. Mention the type of wave.

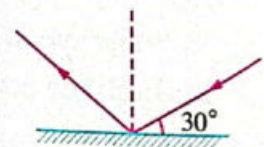


(a)



(b)

3. Mention the sex in each flower.



4. Find the angle of reflection.

C What happens when the amplitude of vibration of a sound source increases 2 times (concerning the sound intensity) ?



Question 2

A Write the scientific term :

1. The ability of the transparent medium to refract light.
2. The area in the longitudinal wave at which the medium particles are the highest density and pressure.
3. A fluid secreted by male genital associated glands.
4. It's the distance covered by light in one second.

B Correct the underlined words :

1. Olive fruit is multi-seed fruit.
2. The distance between the second crest and sixth crest is 20 cm, when the wavelength of the wave is 10 cm.
3. The midpiece of sperm contains chloroplasts which are responsible for energy production needed for the sperms movement.
4. The quantum of energy of green light is less than the quantum of yellow light.

C Mention the signs of puberty in female. (3 points only)

Question 3

A Choose the correct answer :

1. Flowers pollinated by air are characterized by all of the following, except
 - a. hanged anthers.
 - b. feathery like stigmas.
 - c. scented petals.
 - d. light pollen grains.
2. When light ray travels from air to water with an angle incidence = 40, then the angle of refraction in water is
 - a. 30
 - b. 40
 - c. Zero.
 - d. 50
3. The periodic time of a source that makes 60 oscillations/minute =
 - a. 6 sec.
 - b. 1 sec.
 - c. 0.1 sec.
 - d. 10 sec.
4. The wavelength of a sound wave propagating through sea water with velocity 1500 m/sec, knowing that its frequency is 10 kilohertz, is m.
 - a. 150
 - b. $\frac{1}{150}$
 - c. 0.15
 - d. 0.015

B Put (✓) or (✗) then correct the wrong one :

1. The sperms transfer from testes to urethra through the epididymis. ()
2. Fundamental tone's intensity is lower than harmonic tone. ()
3. The frequency of the oscillating body is the reciprocal of the periodic time. ()
4. There is a direct relation between the angle of incidence and the angle of reflection. ()

C Calculate the wave velocity of transverse wave, whose the distance between second crest and tenth crest is 40 m and frequency is double its wavelength.

Question 4**A** Cross out the odd words, then write the relation between the rest :

1. 1×10^6 nanometer – 1×10^3 micrometer – 1×10^{-3} meter – 1×10^{-3} micrometer.
2. Cutting – Pollination – Layering – Grafting.
3. Violin – Piano – Reed pipe – Drill.
4. Yellow – Blue – Black – Violet.

B Rearrange this words according to which between brackets :

1. Corolla – Stamen – Calyx – Carpel. (from outer to inner in flower).
2. Vas deferens – Urethra – Testes – Epididymis.
(according the path of sperm from it's formations and even exit the body).
3. Water – Wood – Air – Carbon dioxide. (discerningly according to sound velocity).
4. Red – Green – Blue – Yellow. (ascendingly according to deviation).

C Compare between sperm and ovum. (according to : size – mobility – structure).**14 Behiera Governorate**

Kafr El-Dawar Educational Zone

Answer the following questions :

Question 1**A** Complete the following sentences :

1. is the area in longitudinal wave at which the medium particles are of the highest density and pressure.
2. Among the factors affecting the sound intensity is
3. Reproduction by grafting is occurred between orange tree and
4. From the kind of artificial vegetative reproduction is

B Write the number which indicate the following :

1. The result of multiplying the frequency and periodic time.
2. The number of chromosomes in sperm.
3. The value of angle of reflection when the light ray falls perpendicular on reflecting surface.
4. The number of floral whorls in unisexual flower.

C 1. Compare between : stamen and carpel (according to function).

2. Calculate the frequency of a musical tone similar to the frequency of a produced tone using Savert's wheel rotated with a velocity of 960 cycles in two minutes, given that the number of teeth of gear is 30 teeth.

Question 2**A** Choose the correct answer :

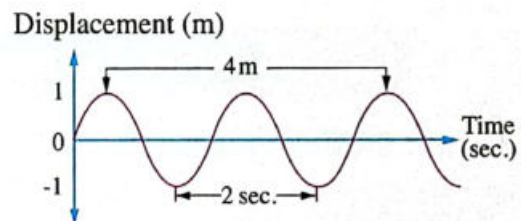
- The maximum displacement done by oscillating body away from rest position is called
a. amplitude. b. complete oscillation. c. periodic time. d. frequency.
- The absolute refractive index always one.
a. more than b. less than c. equal d. no correct answer
- A sound wave of frequency 30 khz is called wave.
a. sonic b. infrasonic c. ultrasonic d. electromagnetic
- The group of flowers carried on the same axle is called
a. bract. b. inflorescence. c. calyx. d. corolla.

B Write the scientific term :

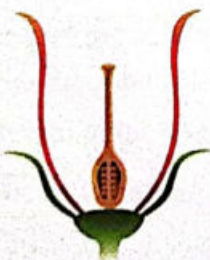
- Wave, in which the particles of the medium vibrate perpendicular to direction of wave propagation.
- The ability of medium to refract light rays.
- The tones accompanying the fundamental tone but they are higher in pitch and less in intensity.
- It is short stem whose leaves are modified to form reproductive organs.

C Look at the opposite figure then calculate :

- Frequency.
- Wavelength.

**Question 3****A** Give one example of the following :

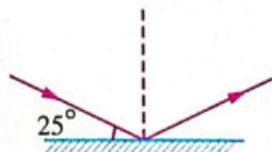
- Oscillatory motion.
- Transverse wave.
- Plant reproduce by tuber.
- Tool is used to avoid the hazards of noise in loud places.

B Look at the following figure then answer :

1. What is sex of the flower ?



2. What is the kind of motion ?



3. Calculate the value of angle of reflection.



4. What is the kind of reproduction ?

C Mention the function of the following :

1. Triangular glass prism.
2. Ultrasonic wave in medical field.

Question 4

A Correct the underlined words :

1. The transitional motion, is the motion which is repeated in equal periods of time.
2. Newton proved that the energy of photons is depend on frequency.
3. The ovum converted into fruit after fertilization.
4. Estrogen hormone is responsible for continuity of pregnancy.

B Odd the scientific word :

1. Nanometer – Hertz – Gigahertz – Megahertz.
2. Sound of hammer – Sound of explosion – Sound of piano – Sound of drill.
3. Radio wave – Sound wave – Light wave – Infrared wave.
4. Olive – Peas – Beans – Watermelon.

C Give reason of the following :

1. The midpiece of sperm contains mitochondria.
2. We can hear sound from all the direction.

15 Fayoum Governorate

West Fayoum Educational Zone

Answer the following questions :

Question 1

A Complete the following sentences :

1. A complete oscillation comprises successive displacements, each of which is called
2. The crest in wave is equivalent to in longitudinal wave.
3. Angle of is the angle between the refracted light ray and at the point of incidence on the separating surface.
4. The hormone in males and the hormone in females are responsible for the appearance of secondary sexual characters.

B Give example for :

1. Longitudinal waves.
2. Low pitched sound.
3. Female gamete in human.
4. Natural asexual reproduction in plants.

C Calculate the absolute refractive index of diamond given that the speed of light in it equals 1.25×10^8 m/s. and the velocity of light in air equals 3×10^8 m/s.

Question 2

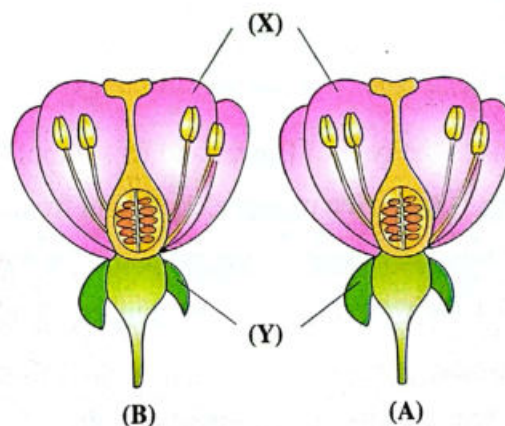
A Correct the underlined words :

1. A body of frequency 200 Hertz makes a complete oscillation in 2 seconds.
2. Sound pitch by which the ear can distinguish between different sounds according to the nature of the source, even if they were of the same pitch and intensity.
3. The angle of incidence is greater than the angle of reflection.
4. The right ovary in the human female, produces a mature ovum every 24 days.

B Cross out the odd word, then write the relation between the rest :

1. Light waves – Radio waves – Ultrasonic waves – Ultraviolet waves.
2. Amplitude of the sound – Density of the medium – Frequency of the sound – Direction of the wind.
3. Tissue culture – Chromes – Cutting – Grafting.
4. Vas deferens – The ovaries – The uterus – Fallopian tubes.

C The following figures show two flowers of two plants of the same species. What's the name of the part (X) ? What's the function of the part (Y) ?



Question 3

A Write the scientific term :

1. The number of complete oscillations produced by the oscillating body in one second.
2. The motion produced as a result of the vibration of the particles of the medium in a certain point and in a certain direction.
3. The reflection in which the light rays recoil in one direction when incident on a glistening surface.
4. A cell, which its nucleus contains 23 pairs of chromosomes resulting from the fusion of sperm and ovum.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Light waves 2. Infrasonic waves 3. Megahertz 4. Androecium	a. equal 1×10^9 Hertz. b. electromagnetic transverse. c. male organ in a flower. d. have frequency less than 20 Hz. e. female organ in a flower. f. equal 1×10^6 Hertz.

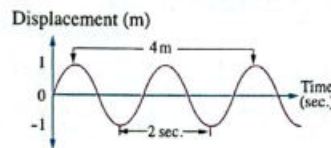
C Give reason for : The energy of red light photon is less than that of orange light photon.

Question 4

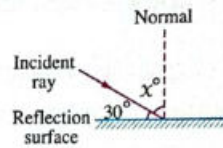
A Look at the following figures then answer :



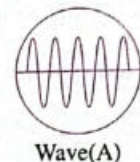
(1)



(2)



(3)



Wave(A)



Wave(B)

(4)

- In the figure (1) what is the type of flower and its symbol ?
- In the figure (2) what is the value of wavelength and frequency ?
- In the figure (3) what is the value of angle (x) and its name ?
- In the figure (4) which the wave (A) or (B) has higher sound pitch and sound intensity ?

B Choose the correct answer :

- The human ear can hear sounds of frequency
a. 50 KHz. b. 30 KHz. c. 300 Hz. d. 10 Hz.
- The result of multiplying the frequency of an oscillating body by its periodic time equals
a. variable value. b. negative value. c. constant value. d. one.
- The sperm consists of , middle part and tail.
a. head b. prostate c. cilia d. membrane
- The ovum is fertilized in
a. ovary. b. uterus. c. fallopian tubes. d. Vas deferens.

C What happens when a pollen grain falls on the stigma of a flower ?

16 Ismailia Governorate**Science Inspectorate**

Answer the following questions :

Question 1

A Complete the following sentences :

1. The complete oscillation includes successive displacements each one is called
2. is a group of coloured leaves, each leaf is called a
3. The crest in the wave is equivalent to the in the longitudinal wave.
4. The fundamental tone is lower in and higher in than the harmonic tones.

B Mention one function of each of the following :

- | | |
|-------------------|---|
| 1. The flower. | 2. Jacuzzi. |
| 3. Seminal fluid. | 4. Ultrasonic waves in industrial fields. |

C Savart's wheel rotates with a rate of 300 cycles per minute. A sound of frequency 600 Hz is produced when an elastic plate touches the teeth of one gear. Calculate the number of teeth of the gear.

Question 2

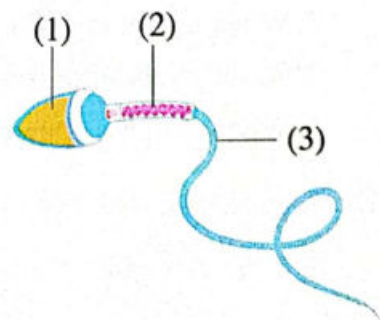
A Choose the correct answer :

1. The colour in the spectrum colours has the highest frequency.
a. white b. violet c. green d. red
2. Sound velocity is the greatest through
a. vacuum. b. solids. c. liquids. d. gases.
3. hormone is responsible for the continuity of pregnancy.
a. Estrogen b. Testosterone c. Progesterone d. Thyroxin
4. The angle of incidence of light is its angle of reflection.
a. larger than b. smaller than c. equal to d. double to

B Mention only one example for the following :

- | | |
|--------------------------|--|
| 1. Electromagnetic wave. | 2. Artificial vegetative reproduction. |
| 3. Bisexual flower. | 4. An animal can produce ultrasonic waves. |

C Study the opposite figure, then label the figure.



Question 3

A Write the scientific term :

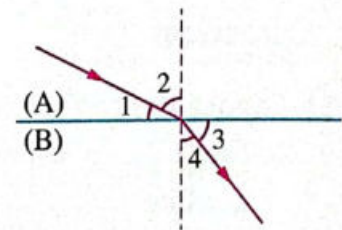
1. The fusion of male cell nucleus (pollen grain) with the female cell nucleus (ovum) to form zygote.
2. The periodic motion made by the oscillating body around its rest position, where the motion is repeated through equal intervals of time.
3. The ability of the medium to refract light rays.
4. The distance between two successive crests or troughs.

B Cross out the odd word :

1. Anther – Carpel – Filament – Pollen grain.
2. Sound quality – Sound intensity – Sound pitch – Sound speed.
3. Nanometer – Hertz – Gigahertz – Megahertz.
4. Photon energy – Frequency – Wavelength – Planck's constant.

C From the opposite figure find the number that refers to the following :

1. The angle of incidence.
2. The angle of refraction.
3. Which medium (A) or (B) is greater in the optical density ?



Question 4

A Put (✓) or (✗) :

1. In non-uniform reflection, the light rays are reflected directly in one direction. ()
2. The uterus has a muscular wall. ()
3. The result of multiplying the frequency of an oscillating body by its periodic time equals $\frac{1}{2}$. ()
4. The intensity of sound is directly proportional to the square of the amplitude. ()

B What happen ... ?

1. To the oscillating body when passes through its rest position during its movement (concerning its velocity).
2. When a light ray falls perpendicular on a reflecting surface.
3. To the ovary after fertilization process in plant.
4. When a pollen grain falls on the stigma of a flower.

C Give reason for : The ovum is relatively large in size.

17 Qena Governorate**Science Inspectorate**

Answer the following questions :

Question 1

A Complete the following sentences :

1. The complete oscillation includes displacements, each is called
2. Waves are classified according to the ability to propagate and transfer energy into and
3. The absolute refractive index of the medium is the ratio between and
4. The hormone in male and hormone in female are responsible for appearance of secondary characters.

B Cross out the odd word then write the relation between the rest :

1. Pendulum motion – Spring motion – Rotary bee motion – Stretched string motion.
2. Red – Orange – White – Violet.
3. Sound wave – Light wave – Radio waves – Infrared waves.
4. Stigma – Stamen – Style – Ovary.

C What's meant by wave motion ?

Question 2

A Write the scientific term :

1. The distance between the centers of two successive compressions or two successive rarefactions.
2. Sound intensity at a certain point is inversely proportional to the square of distance between this point and the source of the sound.
3. The reflection in which the light rays return back in one direction when falling on a glistening surface.
4. The fusion of male cell nucleus with the female cell nucleus.

B Correct the underlined words :

1. The tail contains mitochondria which are responsible for energy production needed for the sperm movement.
2. When light ray travels from air to water, the angle of incidence is equal to the angle of refraction.
3. Ultraviolet waves and infrared waves have same frequency in vacuum.
4. Corolla is the outer whorl of flower and it consists of a group of green leaves.

C Calculate the wavelength of a sound wave propagation through water with velocity 1500 m/sec knowing that the frequency is 10 kilohertz.

Question 3**A** Choose the correct answer :

- The periodic time of a tuning fork which makes 240 waves in one minute is
 a. 1 sec. b. 4 sec. c. $\frac{1}{2}$ sec. d. $\frac{1}{4}$ sec.
- Sound of frequency 200 Hz is than the sound of frequency 100 Hz.
 a. stronger b. sharper c. weaker d. harsher
- White light analyzes into spectrum colours.
 a. 3 b. 5 c. 7 d. 9
- The produced fruit by grafting belong to the type of the
 a. scion. b. cut. c. stock. d. bud.

B Write one example for the following :

- Unisexual flower.
- Animal can produce ultrasonic waves.
- Mechanical transverse wave.
- Factor affecting sound intensity with direct relation.

C What happen when incidence of light rays on a rough surface ?**Question 4****A** Put (✓) or (✗) :

- Crest is the highest point of the particles of the medium in transverse wave. ()
- The energy of the green light is lower than that of yellow light. ()
- The innermost whorl of female flower is the androecium. ()
- Fundamental tone's intensity is lower than that of harmonic tone. ()

B Write measuring unit for the following :

- Periodic time.
- Amplitude.
- Sound intensity.
- Noise intensity.

C Give reason for : Auto pollination cannot happen in sunflowers.**18 Luxor Governorate****Science Inspectorate**

Answer the following questions :

Question 1**A** Complete the following sentences :

- is the time taken by an oscillating body to make one complete oscillation, while is number of complete oscillations made by an oscillating body in one second.
- Wavelength of transverse wave is the distance between two successive or
- Some animals such as and can hear ultrasonic waves.
- The corolla attracts to the flower which helps in process.

B Correct the underlined words :

1. The oscillatory motion is considered as a transitional motion.
2. The energy of red photon has the maximum energy in spectrum colours.
3. Palm flowers are bisexual.
4. The ovary is suitable organ for growth the embryo.

C Calculate the number of gear's teeth, if the wheel rotates with speed 120 cycles/minute and the frequency in Savart's wheel is 100Hz.**Question 2****A Choose the correct answer :**

1. The periodic time for an oscillating body that makes 500 complete oscillations in 50 seconds is
a. 0.1 sec. b. 10 sec. c. 5 sec. d. 0.5 sec.
2. The sharp tones have frequency.
a. low b. high c. medium d. no
3. When light ray travels from air to water it refracts the normal.
a. far from b. on c. near d. perpendicular to
4. The floral leaves of typical flower are arranged in whorls.
a. three b. four c. two d. five

B Complete the following sentences using words from brackets :

(directly – rarefaction – mitochondria – zygote – trough – ovum – inversely)

1. is the area in the longitudinal wave at which the medium particles are of lowest density and pressure.
2. Sound intensity is proportional to the density of medium.
3. Fertilization occurs when is formed.
4. The middle part of the sperm contains responsible for energy production needed for the sperm.

C Give reason for : The stigma of air pollinated flowers are feathery like and sticky.**Question 3****A Put (✓) or (✗) :**

1. The product of multiplying frequency and periodic time equals one. ()
2. Wave amplitude is the number of waves produced from the source in one second. ()
3. The human ear can hear sounds of frequencies ranging from 20 to 20000 Hz. ()
4. Each stamen consists a fine filament ending in a sac know as stigma. ()

B Write the scientific term :

1. It is the distance covered by the wave in one second.
2. It is the returning back of light waves in the same medium on meeting reflecting surface.
3. It is the angle between the reflected light ray and the line perpendicular to the reflecting surface at the point of incidence.
4. Short stem where the leaves developed and modified into reproductive organs.

C Calculate the wavelength of a sound wave propagating through sea water with velocity 1500 m/sec knowing that its frequency is 10 Kilohertz.**Question 4****A Give one example of each following :**

1. Oscillatory motion.
2. Smooth reflecting surfaces.
3. High pitched sounds.
4. A plant which is pollinated by man.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Simple harmonic motion	a. the measuring unit of noise intensity.
2. Decibel	b. simplest form of oscillatory motion.
3. Testosterone	c. the measuring unit of sound intensity.
4. Vagina	d. the male hormone secreted by testes.
	e. a muscular tube that expands during the labour.

C What happens to the ovary after fertilization process occurs in the plant ?**19 Aswan Governorate****Edfu Educational Zone**

Answer the following questions :

Question 1**A Complete the following sentences :**

1. Radio waves are considered as waves that propagate through free space with a velocity of
2. The crest in the wave is equivalent to the in the longitudinal wave.
3. Photon energy = \times
4. gland and glands are from glands associated with the genital system.

B Correct the underlined words :

1. The measuring unit of frequency is meter.



2. The measuring unit of the level of sound intensity is Watt/m².
3. The ovum is a mobile cell and relatively large in size.
4. The reproduction by tubers occurs between oranges and naring.

C Define the sound pitch.

Question 2

A Choose the correct answer :

1. All of the following are factors affecting sound intensity, except the
 - a. amplitude of vibration.
 - b. medium density.
 - c. frequency.
 - d. wind direction.
2. The light waves are
 - a. transverse mechanical waves.
 - b. longitudinal electromagnetic waves.
 - c. transverse electromagnetic waves.
 - d. mechanical waves.
3. If the frequency of oscillation body is 6 Hz, the periodic time is sec.
 - a. 6
 - b. 3
 - c. $\frac{1}{6}$
 - d. $\frac{1}{3}$
4. Fertilization occurs when is formed.
 - a. embryo
 - b. zygote
 - c. endometrium
 - d. ovum

B Cross out the odd word, then write the relation between the rest :

1. Motion of simple pendulum – Motion of string – Motion of spring – Motion of rotary bee.
2. Yellow – White – Blue – Violet.
3. Sepals – Petals – Tubers – Carpels.
4. Cutting – Pollination – Grafting – Tissue culture.

C Give a reason for : Petals of corolla are bright colored and scented leaves.

Question 3

A Put (✓) or (✗) :

1. Wave velocity (V) = Frequency (F) × Wavelength (λ). ()
2. The sound intensity decreases, when the source of sound touches an empty box. ()
3. Sound quality it is the property by which the ear can distinguishing between sounds either strong or weak sound. ()
4. Flowers in which pollination occurs by air are feathery like and sticky. ()

B Complete the following sentences using words from brackets :

(tissue culture – estrogen – sonic waves – reciprocal)

1. The frequency of an oscillating body is the of the periodic time.

2. they are sound waves of frequencies ranging from 20 Hz to 20 KHz.
3. it is process of multiplying a small part of a plant to get many identical parts.
4. hormone which is responsible for the appearance of secondary female sex characters.

C What happen after pollen grains transfer to the stigmas of flowers ?

Question 4

A Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Stamen	a. from the factors affecting the sound intensity.
2. Wave velocity (V)	b. formed from crests and troughs.
3. Wind direction	c. the distance covered by the wave in one second.
4. Transverse wave	d. it is the male reproductive organ of the flower.

B Write the scientific term :

1. It is the reflection of light rays when they meet a smooth and glistening reflecting surface, where the incident light rays are reflected in one direction.
2. It is a short stem whose leaves are modified to form genital organs which in turn form seeds inside fruits.
3. It is an external factor that affects the ear causing the sense of hearing.
4. The time taken by an oscillating body to make one complete oscillation.

C What is the meaning of light refraction ?

20 South Sinai Governorate

Science Inspectorate

Answer the following questions :

Question 1

A Complete the following sentences :

1. Complete oscillation includes successive displacements each of them is called
2. Visible light waves are considered transverse waves, while sound waves of longitudinal waves.
3. Male gametes in man are known as , while the female gametes are known as
4. pollination occurs to maize plants, while pollination occurs to barley plant.

B Put (✓) or (✗) :

1. The pitch of sound depends on the amplitude of the vibration of its source. ()
2. The stamen ends with a swollen called the receptacle. ()
3. Uniform reflection occurs from smooth shiny surfaces. ()
4. In the transverse wave, the particles of the medium vibrate in the same direction of the wave propagation. ()

C Calculate the frequency of the musical tone similar to the frequency of a produced tone using the Savart's wheel rotates with velocity of 960 cycles in two minutes, knowing that the number of teeth of the gear is 30 teeth.

Question 2

A Cross out the odd word, then write the relation between the rest :

1. Pendulum movement – Spring movement – Car movement – Stretched string movement.
2. Density of the medium – Wind direction – Frequency – Vibrating surface area.
3. Rhizomes – Corms – Grafting – Bulbs.
4. The two seminal vesicles – The prostate gland – Cowper's gland – The ovary.

B Choose the correct answer from the brackets as follows :

1. The human ear distinguishes the frequency of sound
(50 KHz. – 30 KHz. – 300 Hz. – 5 Hz.)
2. light is the largest colors of the spectrum in wavelength.
(White – Red – Violet – Yellow)
3. A green leaf where the floral bud emerges from its axle and developed into a flower is called
(bract. – sepal. – petal. – inflorescence.)
4. The frequency of a vibrating body \times its periodic time is equal to
(variable amount. – more than one. – less than one. – one.)

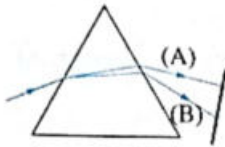
C Calculate the velocity of light through glass if the speed of light through air is 3×10^8 m/s and the absolute refractive index of glass is 1.5

Question 3

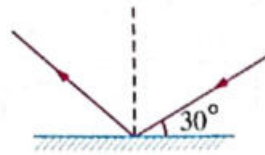
A Write the scientific term :

1. Tones accompanying the fundamental tone that are higher in pitch and lower in intensity.
2. The angle between the refracted ray of light and the normal from the point of incidence on the interface.
3. Highly looped tubes connected to the testes in which sperm development is completed.
4. Motion produced as a result of the vibration of the medium particles at a certain moment and in a definite direction.

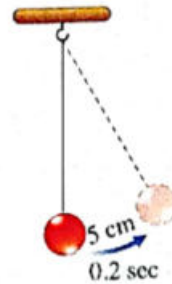
B Study the following figures, then answer the required below each of them :



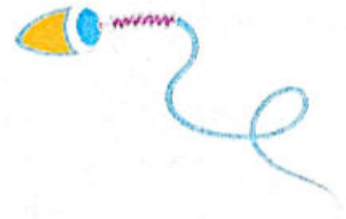
1. Which of the following rays does refer to violet light ?



2. The reflecting angle =



3. The periodic time =



4. What does the figure represent ?

C Give reason for : The fruit of the peach contains one seed, while the fruit of peas contains several seeds.

Question 4

A Correct the underlined words :

- Simple harmonic motion is the simplest form of the translational motion.
- The wavelength of the transverse wave is the distance between the centers of two successive compressions.
- Infrasonic waves are used in sterilizing food.
- Reproduction by tubers uses in the stem of the orange plant.

B Choose from column (B) what suits it in column (A) :

(A)	(B)
1. Ovary	a. frequency \times wavelength
2. Wave velocity	b. is directly proportional to the frequency of light.
3. Photon energy	c. in which the male cell nucleus merges with the female cell nucleus to form a zygote.
4. Fertilization	d. a peeled-sized gland located inside the abdominal cavity from the back.
	e. a hollow pear-shaped organ located inside pelvic cavity.

C What happens when a vibrating object approaches its resting position "according to its speed" ?

Cairo Governorate

1 East Nasr Educational Zone

- 1 (A) 1. watt/m^2 – Decibel.
 2. electromagnetic waves – mechanical waves.
 3. calyx – sepal. 4. 20 – 20000

- (B) 1. Jacuzzi is used to treat :
 - Sprains and cramps by using hot water.
 - Nervous tension by using cold water.
 2. • Production of sperms.
 • Production of testosterone hormone.
 3. Savart's wheel is used to determine the pitch (frequency) of an unknown tone.
 4. - It protects the reproductive organs.
 - It attracts insects to the flower, which help in the reproduction process.

- (C) The velocity of sound wave in air =
 Frequency of sound wave \times Wavelength
 $= 400 \times 0.85 = 340 \text{ m/sec.}$

- 2 (A) 1. Fertilization in plant.
 2. Light refraction.
 3. Sound.
 4. Amplitude.

- (B) 1. • The odd word is : Pollination.
 • The other words are : Ways of artificial vegetative reproduction.
 2. • The odd word is : White.
 • The other words are : Spectrum colours.
 3. • The odd word is : Drill.
 • The other words are : Tools that produce musical tones.
 4. • The odd word is : Rotary bee motion.
 • The other words are : Tools that produce oscillatory motion.

- (C) Because the frequency of red light photon is less than that of orange light photon.

- 3 (A) 1. b 2. a 3. b 4. a
 (B) 1. rarefaction 2. half
 3. equal to 4. greater than
 (C) a. $\text{Wavelength} = \frac{\text{covered distance}}{\text{number of waves}} = \frac{6}{2} = 3 \text{ m.}$
 b. $\text{Frequency} = \frac{1}{T} = \frac{1}{2} \text{ Hz.}$ c. 1 m.

- 4 (A) 1. (✓)
 2. (✗) The stigmas
 3. (✗) decreases.
 4. (✗) a transverse wave

(B) 1.

P.O.C	The sperm	The ovum
The size :	It has a small size.	It has a relatively large size.

2.

P.O.C	Mechanical waves	Electromagnetic waves
The speed :	Their velocity is relatively low.	Their velocity is great ($3 \times 10^8 \text{ m/sec.}$)

- (C) It will reflect on itself.

2 El-Nozha Educational Zone

- 1 (A) 1. oscillatory motion.
 2. Mechanical
 3. pitch (frequency)
 4. refraction

- (B) 1. (✓) 2. (✗) 3. (✓) 4. (✗)

- (C) It will reflect on itself.

- 2 (A) 1. a 2. d 3. b 4. b
 (B) 1. B - c 2. D - d
 3. A - a 4. C - b

- (C) Because it is repeated regularly at equal periods of time.

- 3 (A) 1. radio 2. Stretched string
 3. viloin 4. vagina

- (B) 1. • The odd word is : Stamen.
 • The rest words are : Parts of female reproductive organ in flower (carpel).
 2. • The odd word is : Leaf.
 • The rest words are : Smooth and reflecting surfaces.
 3. • The odd word is : Water.
 • The rest words are : Tools that produce oscillatory motion.

4. • The odd word is : Black.

• The rest words are : Spectrum colours.

(C) It transfers the sperms from the testes to the urinary genital duct (urethra).

4 (A) 1. Light refraction.

2. Infrasonic waves.

3. Angle of emergence.

4. The rarefaction.

(B) 1. Calyx – Corolla – Stamen – Carpel.

2. Red < Orange < Yellow < Green.

3. Wood > water > carbon dioxide > air.

4. Testes – Epididymis – Vas deferens – Urethra.

(C) Frequency = $\frac{\text{Number of complete oscillations}}{\text{Time in seconds}}$
 $= \frac{720}{90} = 8 \text{ Hz.}$

3 Heliopolis Educational Zone

1 (A) 1. two - amplitude.

2. compressions – rarefactions.

3. sexual – asexual

4. transverse – compression

(B) 1. d 2. c 3. a 4. b

(C) Frequency (F) =

$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}}$$

$$600 = \frac{300 \times \text{No. of gear teeth (n)}}{1 \times 60}$$

$$\text{No. of gear teeth (n)} = 600 \times \frac{60}{300} = 120 \text{ teeth.}$$

2 (A) 1. The visible light.

2. Angle of incidence of light.

3. Flower.

4. Oscillatory motion.

(B) 1. Production of pollen grains.

2. It is used to treat sprains and cramps.

3. It analysis the white light into seven spectrum colours.

4. It is responsible for the movement of the sperm till it reaches the ovum.

(C) Calyx – Corolla – Androecium – Gynoecium.

Answers of Final Examinations



3 (A) 1. (✓)

2. (✗) oscillatory motion.

3. (✓)

4. (✓)

(B) 1. refracts

2. increases

3. complete

4. Red

(C) Because the angle of incidence and the angle of reflection are equal to zero.

4 (A) 1. b 2. c 3. c 4. d

(B) 1. • The odd word is : Cytoplasm.

• The rest words are : Structure of the sperm.

2. • The odd word is : Stamen.

• The rest words are : parts of female reproductive organ in the flower (carpel).

3. • The odd word is : White.

• The rest words are : Spectrum colours.

4. • The odd word is : Water wave.

• The rest words are : Tools that produce oscillatory motion.

(C) The ovary will grow to become a fruit.

4 Shubra Educational Zone

1 (A) 1. crests – troughs.

2. 20 – 20000

3. testosterone – estrogen

4. $9 \text{ Hz} - \frac{1}{9} \text{ second}$

(B) 1. (✓) 2. (✗) 3. (✗) 4. (✓)

(C) It will reflect on itself.

2 (A) 1. Optical density of the medium.

2. Amplitude.

3. Sound quality (type).

4. Flower.

(B) 1. Pancreas gland.

2. Rotary bee motion.

3. Black.

4. Testes.

(C) Because the flowers contain only male or female reproductive organ.

3 (A) 1. 10 cm. 2. sperm

3. equal to

4. oscillatory

(B) 1. d

2. a

3. b

4. c

(C) Frequency (F) =

$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}} = \frac{960 \times 30}{120} = 240 \text{ Hz.}$$

4 (A) 1. a 2. a 3. b 4. a

(B) 1. Sound waves. 2. Peaches.
3. Violet.
4. Ovary.

(C) Protection of the inner parts of the flower specially before blooming.

5 El-Sayed Zeinab Educational Zone

1 (A) 1. two – amplitude.

2. fruit – seed.
3. reflection – incidence.
4. high – low

(B) 1. straight 2. unisexual
3. crest. 4. a root

(C) The intensity of sound decreases to its quarter value.

2 (A) 1. Self (Auto) pollination.

2. Opaque medium.
3. Periodic motion.
4. The flower.

(B) 1. Water waves. 2. Testes.
3. Wood. 4. Displacement.

(C) To attract insects to the flower which help in the sexual reproduction process.

3 (A) 1. c 2. b 3. d 4. c

(B) 1. (x) 2. (x) 3. (x) 4. (✓)

(C) Frequency (F) =

$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}} = \frac{960 \times 30}{2 \times 60} = 240 \text{ Hz.}$$

4 (A) 1. d 2. a 3. e 4. b

(B) 1.

P.O.C	The sperms	The ova
The size :	They have a small size.	They have a relatively large size.
The number :	Greater.	Fewer.

2.

P.O.C	Sound waves	Light waves
Speed :	Relatively slower.	Relatively faster.
Type of wave :	Sound waves are mechanical longitudinal waves.	Light waves are electromagnetic transverse waves.

(C) Frequency =

$$\frac{\text{Number of complete oscillations}}{\text{Time in seconds}} = \frac{240}{1 \times 60} = 4 \text{ Hz.}$$

6 Agoza Educational Zone

1 (A) 1. sperms – testosterone

2. watt/m² – Decibel.
3. equal to
4. transverse – compression

(B) 1. (x) 2. (x) 3. (x) 4. (✓)

(C) Periodic time =

$$\frac{\text{Time in seconds}}{\text{Number of complete oscillations}} = \frac{0.5 \times 60}{300} = 0.1 \text{ sec.}$$

2 (A) 1. a 2. d 3. a 4. c

(B) 1. carpel
2. an oscillatory motion.
3. increases
4. greater than one.

(C)

P.O.C	The sperm	The ovum
Number :	Greater.	Fewer.
Size :	Small.	Relatively large.
Motion :	Mobile.	Static (not mobile).



- 3** (A) 1. Due to the difference in harmonic tones that associate the fundamental tone of each of them.
 2. Because the flowers contain only male or female reproductive organ.
 3. Because they have high ability to kill some types of bacteria and stop the action of some viruses.
 4. Because the periodic time is inversely proportional to the number of complete oscillations made by the oscillating body at constant time.

- (B) 1. Sound wave.
 2. Prostate.
 3. Tubers.
 4. White light.

(C) Frequency (F) =
$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}}$$

$$100 = \frac{200 \times \text{No. of gear teeth (n)}}{1 \times 60}$$

 No. of gear teeth (n) = $100 \times \frac{60}{200} = 30$ teeth.

- 4** (A) 1. Wave velocity.
 2. Optical density of the medium.
 3. Fertilization in human.
 4. Sound pitch.

- (B) 1. A longitudinal wave is formed.
 2. It will reflect on itself.
 3. The ovary will grow to become a fruit.
 4. It will germinate forming a pollen tube.

- (C) It analysis the white light into seven spectrum colours.

Giza Governorate

7 El-Shiekh Zayed Educational Zone

- 1** (A) 1. b 2. b 3. a 4. d

- (B) 1. Oscillatory – wave
 2. low – high
 3. anthers – ovaries
 4. male – testes.

- (C) It appears as being broken. Due to the refraction of light rays coming from the immersed part in water.

- 2** (A) 1. (✓)
 2. (✗) The wave velocity
 3. (✓)
 4. (✗) uterus and vagina.
 (B) 1. c 2. e 3. b 4. d
 (C) 1. Testosterone. 2. Uterus.
 3. Palms.

- 3** (A) 1. simple harmonic 2. two
 3. sonic 4. fertilization
 (B) 1. ovaries. 2. refraction
 3. seven 4. Mechanical waves

(C) Frequency (F) =
$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}}$$

$$1000 = \frac{250 \times \text{No. of gear teeth (n)}}{1.5 \times 60}$$

 No. of gear teeth (n) = $1000 \times \frac{90}{250} = 360$ teeth.

- 4** (A) 1. Tubers. 2. Sound waves.
 3. Black. 4. Stamen.
 (B) 1. Hertz. 2. Sound pitch.
 3. Uterus. 4. Vas deferens.
 (C) To attract insects to the flower which help in the sexual reproduction process.

8 6th of October Educational Zone

- 1** (A) 1. fruit – seed.
 2. longitudinal – transverse
 3. one.
 4. compression
 (B) 1. It analysis the white light into seven spectrum colours.
 2. It is used to treat :
 - Sprains and cramps by using hot water.
 - Nervous tension by using cold water.
 3. • Breaking down kidney and ureter stones without any surgical operations.
 • Diagnosis of male prostate gland tumors and its effect on bladder.
 • Discovering malignant tumors.
 • Sterilization of food, water and milk.
 • Discovering of landmines.
 4. Attraction of insects and protection of reproductive organs.

(C) Frequency (F) =

$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}} = \frac{180 \times 15}{1 \times 60} = 45 \text{ Hz.}$$

2 (A) 1. b 2. b 3. a 4. a

(B) 1. Because the velocity of light waves of lightning (electromagnetic waves) is much greater than that of sound waves of thunder (mechanical waves).

2. It is a periodic motion because it is repeated regularly in equal time intervals, but it is not an oscillatory motion because it is not repeated on the two sides of its rest position.

3. Because angle of incidence = angle of reflection = Zero.

4. Because the frequency of red light photon is less than that of violet light photon.

(C) 1. Hermaphrodite flower $\text{♂} \text{♀}$ (Bisexual).

2. Male flower ♂ (unisexual).

3. Female flower ♀ (unisexual).

3 (A) 1. Flower. 2. Frequency.

3. Fallopian tubes. 4. Sound.

(B) 1. c 2. d 3. a 4. b

(C) Absolute refractive index of a diamond = $\frac{\text{The velocity of light through air}}{\text{The velocity of light through diamond}}$

$$= \frac{3 \times 10^8}{1.25 \times 10^8} = 2.4$$

4 (A) 1. (✓) 2. (✗) 3. (✓) 4. (✓)

(B) 1. Movement of pendulum.

2. Pollination.

3. 5 Hertz.

4. Energy of photon.

(C) 1. 1 m

2. Wavelength =

$$\frac{\text{The distance which covered by waves}}{\text{Number of waves}} = \frac{10}{2} = 5 \text{ m}$$

3. Periodic time = Time of a complete wave = $2 \times 2 = 4 \text{ sec.}$

Alexandria Governorate

9 East Educational Zone

1 (A) 1. directly 2. Mechanical waves
3. Hertz 4. Uterus

(B) 1. Periodic motion. 2. Speed of light.
3. Vagina. 4. Self (Auto) pollination.

(C) Diagnosis of male prostate gland tumors and its effect on bladder.

2 (A) 1. b 2. d 3. c 4. a

(B) 1. (✓) 2. (✗) 3. (✓) 4. (✓)

(C) Production of ova and production of female sex hormones (estrogen and progesterone hormones).

3 (A) 1. Tuning fork.

2. Water waves.

3. The waves accompany the blowing of storms that precede rainfall.

4. Pollination by air (wind).

(B) 1. meter. 2. 340

3. equal to 4. Receptacle

(C)

P.O.C	Transverse waves	Longitudinal waves
Composition :	Crests and troughs.	Compressions and rarefactions.
Example :	Water waves.	Sound waves.

4 (A) 1. Wood. 2. Black.

3. The bee toy. 4. Testes.

(B) 1. Ultrasonic waves 2. frequency.

3. inversely

4. sound velocity.

(C) Periodic time (T) =

$$\frac{\text{Time in seconds}}{\text{Number of complete oscillations}} = \frac{0.5 \times 60}{300} = 0.1 \text{ sec.}$$

$$\text{Frequency (F)} = \frac{1}{\text{Periodic time}} = \frac{1}{0.1} = 10 \text{ Hz.}$$



10 Borg El-Arab Educational Zone

- 1 (A) 1. rest position.
2. Electromagnetic transverse
3. pitch (frequency)
4. inflorescence.
- (B) 1. (✗) 2. (✗) 3. (✓) 4. (✓)

(C) Frequency (F) =

$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}}$$

$$300 = \frac{\text{No. of cycles (d)} \times 100}{2 \times 60}$$

$$\text{No. of cycles (d)} = \frac{300 \times 120}{100} = 360 \text{ cycle.}$$

- 2 (A) 1. Crest. 2. Musical tone.
3. Light intensity. 4. Androecium.
- (B) 1. Amplitude. 2. increases four times.
3. calyx. 4. uterus.
- (C) Because their anthers and stigmas are not matured at the same time.

- 3 (A) 1. b 2. a 3. d 4. c
- (B) 1. Hertz. 2. Watt/m².
3. Decibel. 4. Meter.
- (C) It will pass without refraction.

- 4 (A) 1. 400 complete oscillations.
2. 2 sec.
3. Frequency (F) =
- $$\frac{\text{Number of complete oscillations}}{\text{Time in seconds}} = \frac{400}{4} = 100 \text{ Hz.}$$
4. Periodic time = $\frac{1}{\text{Frequency}} = \frac{1}{100} = 0.01 \text{ sec.}$
- (B) 1. Protection of reproductive organs of the flower and attraction of insects to the flower, which help in the reproduction process.
2. Production of ova and production of female sex hormones (estrogen and progesterone hormones).

3. They are used to avoid the hazards of noise in loud places.
4. It is used to treat sprains and cramps by using hot water, and to treat nervous tension by using cold water.

(C) 1. 2 cm.

2. Frequency = $\frac{1}{\text{periodic time}} = \frac{1}{0.04} = 25 \text{ Hz.}$

3. ∴ Wave velocity = Frequency × Wavelength.

∴ Wavelength = $\frac{\text{Wave velocity}}{\text{Frequency}} = \frac{20}{25} = 0.8 \text{ m.}$

Qalyoubia Governorate

11 Official language schools Administration

- 1 (A) 1. b 2. b 3. d 4. c
- (B) 1. wave velocity. 2. watt/m².
3. water 4. inflorescence
- (C) Frequency (F) =
- $$\frac{\text{Number of cycles (d)} \times \text{Number of gear teeth (n)}}{\text{Time in seconds (t)}}$$
- $$600 = \frac{300 \times \text{Number of gear teeth}}{0.5 \times 60}$$
- Number of gear teeth = $\frac{30 \times 600}{300} = 60 \text{ teeth.}$

- 2 (A) 1. low – high
2. transverse – compression
3. calyx – androecium
4. testosterone – estrogen
- (B) 1. Fallopian tubes. 2. Sound wave.
3. White. 4. Stamen.
- (C) 1. 1 cm.
2. Periodic time = 4 × time of amplitude
= 4 × 0.1 = 0.4 sec.
3. Frequency = $\frac{1}{\text{Periodic time}} = \frac{1}{0.4} = 2.5 \text{ Hz.}$
- 3 (A) 1. straight 2. sound pitch
3. electromagnetic waves.
4. anther
- (B) 1. (✓) 2. (✗) 3. (✗) 4. (✓)
- (C) 1. Maize. 2. Sparrow.
3. Violet.

- 4 (A)** 1. Tissue culture.
2. First law of light reflection.
3. Periodic motion.
4. Testes.
- (B)** 1. It will germinate forming a pollen tube by self (auto) pollination.
2. The intensity of sound decreases to its quarter value.
3. The sperms can't transfer from the testes to the urinary genital duct and the individual becomes infertile.
4. It will reflect on itself.
- (C)** 1. It is means the process of fusion of the nucleus of male cell (pollen grain) with the nucleus of female cell (ovum) to form the zygote.
2. It is means that the sound waves of frequencies higher than 20000 Hz (20 KHz).
3. It is means the change of light path when it travels from a transparent medium to another transparent medium of different optical density.

Sharkia Governorate

12 Science Inspectorate

- 1 (A)** 1. Optical density of the medium.
2. The cut.
3. Oscillatory motion.
4. Wave velocity.
- (B)** 1. (✓) 2. (✗) 3. (✓) 4. (✗)
- (C)** Frequency (F) =
- $$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}}$$
- $$\text{Frequency} = \frac{360 \times 60}{1 \times 60} = 360 \text{ Hz.}$$

- 2 (A)** 1. crest – trough. 2. green – sepal.
3. Red – violet. 4. sperm – ovum.
- (B)** 1. watt/m². 2. 20 cm.
3. half amount 4. tubers.

(C) Because their anthers and stigmas are not matured at the same time.

- 3 (A)** 1. • The odd word is : Rotary bee.
• The other words are : Tools that produce oscillatory motion.
2. • The odd word is : Sound wave.
• The other words are : Transverse waves.
3. • The odd word is : White.
• The other words are : Spectrum colours.
4. • The odd word is : Pollination.
• The other words are : Ways of artificial vegetative reproduction.

(B) 1. a. 2 b. 2 c. 1
2. 1

(C) The absolute refractive index of glass =

$$\frac{\text{Velocity of light through air}}{\text{Velocity of light through glass}}$$

$$= \frac{3 \times 10^8}{2 \times 10^8} = \frac{3}{2} = 1.5$$

- 4 (A)** 1. b 2. a 3. b 4. b

- (B)** 1. Protection of reproductive organs of the flower.
2. Production of sperms.
3. It analysis the white light into seven spectrum colours.
4. It is used to treat sprains and cramps by using hot water.

(C) This means that the angle between the emergent light ray and the line perpendicular to the interface at the point of emergence is 43°.

Gharbia Governorate

13 Science Inspectorate

- 1 (A)** 1. watt/m² – Decibel
2. horizontal root – terrestrial stem
3. 0.2
4. transverse waves – longitudinal waves.
- (B)** 1. Grafting by attachment.
2. Longitudinal wave.
3. a. male flower. b. female flower.
4. 60°
- (C)** The sound intensity increases 2 times.



- 2 (A) 1. Optical density of the medium.
2. The compression.
3. Seminal fluid.
4. light velocity.

- (B) 1. single seed 2. 40 cm
3. mitochondria 4. orange

- (C) • Growth of hair in armpit and pubic.
• Softness of voice.
• Growth and development of breasts.

- 3 (A) 1. c 2. a 3. b 4. c

- (B) 1. (x) ... through the vas deferens.
2. (x) ... is higher than harmonic tone.
3. (✓)
4. (✓)

- (C) wave velocity = Frequency × wavelength
= $10 \times 5 = 50$ m/sec.

- 4 (A) 1. • The odd word is : 1×10^{-3} micrometer.
• The rest words are : Items represent one millimeter.
2. • The odd word is: Pollination.
• The rest words are : Ways of artificial vegetative reproduction.
3. • The odd word is: Drill.
• The rest words are : Tools that produce musical tones.
4. • The odd word is : Black.
• The rest words are : Spectrum colours.

- (B) 1. Calyx – Corolla – Stamen – Carpel.
2. Testes – Epididymis – Vas deferens – Urethra.
3. Carbon dioxide – Air – Water – Wood.
4. Red – Yellow – Green – Blue.

(C)

P.O.C	The sperm	The ovum
• Size :	Small.	Relatively large.
• Mobility :	Mobile.	Static (not mobile).
• Structure :	It consists of : The head, midpiece and tail.	It consists of : The nucleus, cytoplasm and cellular membrane

Behiera Governorate

14 Kafr El-Dawar Educational Zone

- 1 (A) 1. The compression
2. The distance between the ear and the sound source.
3. naring. 4. cutting.
(B) 1. one. 2. 23 chromosomes.
3. Zero. 4. three.
(C) 1.

P.O.C	Stamen	Carpel
Function :	Production of pollen grains.	Production of ovules.

2. Frequency (f) = $\frac{\text{Number of cycles (d)} \times \text{Number of gear teeth (n)}}{\text{Time in seconds (t)}}$
= $\frac{960 \times 30}{2 \times 60} = 240$ Hz.

- 2 (A) 1. a 2. a 3. c 4. b

- (B) 1. Transverse wave.
2. Optical density of the medium.
3. Harmonic tones.
4. The flower.

(C) 1. Frequency = $\frac{1}{\text{periodic time}} = \frac{1}{2}$ Hz.
2. Wavelength = $\frac{\text{The distance covered by wave}}{\text{Number of waves}}$
= $\frac{4}{2} = 2$ m.

- 3 (A) 1. Tuning fork. 2. Infrared waves.
3. Potatoes. 4. Ear plug.
(B) 1. Female flower. 2. Periodic motion.
3. The angle of reflection is 65° .
4. Reproduction by grafting.
(C) 1. It analysis the white light into seven spectrum colours.
2. • Breaking down kidney and ureter stones without any surgical operations.
• Diagnosis of male prostate gland tumors and its effect on bladder.
• Discovering malignant tumors.

- 4 (A) 1. Periodic 2. Max planck
3. ovary 4. Progesterone
(B) 1. Nanometer. 2. Sound of piano.
3. Sound wave. 4. Olive.

(C) 1. Because mitochondria are responsible for energy production needed for the sperms movement.

2. Because sound travels through air as spheres of compressions and rarefactions whose center is the sound source.

Fayoum Governorate

15 West Fayoum Educational Zone

1 (A) 1. two – amplitude.

2. transverse – compression

3. refraction – the normal

4. testosterone – estrogen

(B) 1. Sound waves.

2. Lion.

3. Ovum.

4. Tubers.

(C) Absolute refractive index of a diamond =
The velocity of light through air

The velocity of light through diamond

$$= \frac{3 \times 10^8}{1.25 \times 10^8} = 2.4$$

2 (A) 1. 0.5

2. Sound quality (type)

3. equal to

4. 56 days.

(B) 1. • The odd word is : Ultrasonic waves

• The rest words are : Electromagnetic waves.

2. • The odd word is : Frequency of the sound.

• The rest words are : Factors affecting the sound intensity.

3. • The odd word is : Chromes.

• The rest words are : Ways of artificial vegetative reproduction.

4. • The odd word is : Vas deferens.

• The rest words are : Female reproductive system.

(C) • Part (x) is called corolla.

• Function of part (y) is protects the inner parts of the flower specially before blooming.

3 (A) 1. Frequency.

2. Wave motion.

3. Regular (uniform) reflection.

4. Zygote.

(B) 1. b

2. d

3. f

4. c

(C) Because the frequency of red light photon is less than that of orange light photon.

4 (A) 1. Male flower (♂)

2. Wavelength = $\frac{4}{2} = 2$ m and frequency = $\frac{1}{2} = 0.5$ Hz.

3. Angle(x) is 60° and it is an angle of incidence.

4. • Sound pitch : Wave (A) has higher pitch (sharper) than wave (B).

[Because the frequency of wave (A) is more than that of wave (B)].

• Sound intensity : Wave (A) has more intensity (stronger) than wave (B).

[Because the amplitude of wave (A) is larger than that of wave (B)]

(B) 1. c

2. d

3. a

4. c

(C) It will germinate forming a pollen tube.

Ismailia Governorate

16 Science Inspectorate

1 (A) 1. two – amplitude

2. Corolla – petal.

3. transverse – compression

4. pitch – intensity

(B) 1. It is the organ of sexual reproduction of flowering plants.

2. It is used to treat nervous tension by using cold water.

3. It facilitates the flow of sperms.

4. Sterilization of food, water and milk.

(C) Frequency (F) =

$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}}$$

$$600 = \frac{300 \times \text{No. of gear teeth (n)}}{1 \times 60}$$

$$\text{No. of gear teeth (n)} = 600 \times \frac{60}{300} = 120 \text{ teeth.}$$

2 (A) 1. b

2. b

3. c

4. c

(B) 1. Infrared waves.

2. Cutting.

3. Tulip.

4. Dolphin.

(C) 1. Nucleus (in the head of the sperm).

2. Mitochondria (in the midpiece of the sperm).

3. Tail of the sperm.

3 (A) 1. Fertilization in plant

2. Oscillatory motion.

3. Optical density of the medium.

4. The wavelength of the transverse wave.



- (B) 1. Carpel. 2. Sound speed.
3. Nanometer. 4. Wavelength.
(C) 1. 2 2. 4
3. medium (B) is greater in the optical density.

4 (A) 1. (x) 2. (✓) 3. (x) 4. (✓)

- (B) 1. Its velocity increases to the maximum value.
2. It will reflect on itself.
3. The ovary will grow into a fruit.
4. It will germinate forming a pollen tube.
(C) Due to the storage of nutrient materials.

Qena Governorate

17 Science Inspectorate

- 1 (A) 1. two successive – amplitude.
2. electromagnetic waves – mechanical waves.
3. The velocity of light through air – the velocity of light through the medium.
4. testosterone – estrogen.
(B) 1. • The odd word is : Rotary bee motion.
• The rest words are : Tools that produce oscillatory motion.
2. • The odd word is : White.
• The rest words are : Spectrum colours.
3. • The odd word is : Sound wave.
• The rest words are : Electromagnetic transverse waves.
4. • The odd word is : Stamen.
• The rest words are : Female reproductive organ in flower (carpel).
(C) That is mean the periodic motion produced as a result of the vibration of the medium particles at a certain moment and in a definite direction.

2 (A) 1. The wavelength of the longitudinal wave.
2. The inverse square law of sound.
3. Regular (uniform) reflection.
4. Fertilization.

- (B) 1. The midpiece 2. greater than
3. velocity 4. Calyx

$$(C) \text{ Wavelength } (\lambda) = \frac{\text{Wave velocity (V)}}{\text{Frequency (F)}} \\ = \frac{1500}{10 \times 10^3} = \frac{3}{20} = 0.15 \text{ m.}$$

3 (A) 1. d 2. b 3. c 4. a

- (B) 1. Palms. 2. Dolphin.
3. Water waves.
4. Square of the amplitude.

(C) The light rays are reflected in many directions.

4 (A) 1. (✓) 2. (x) 3. (x) 4. (x)

- (B) 1. Second (sec.).
2. Metre (m).
3. Watt/m². 4. Decibel.

(C) Because their anthers and stigmas are not matured at the same time.

Luxor Governorate

18 Science Inspectorate

- 1 (A) 1. Periodic time – frequency
2. Crests – troughs.
3. dolphin – bat
4. insects – reproduction

- (B) 1. periodic 2. violet
3. unisexual. 4. uterus

(C) Frequency (F) =

$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}}$$

$$100 = \frac{120 \times \text{No. of gear teeth (n)}}{1 \times 60}$$

$$\text{No. of gear teeth (n)} = 100 \times \frac{60}{120} = 50 \text{ teeth.}$$

2 (A) 1. a 2. b 3. c 4. b

- (B) 1. Rarefaction 2. directly
3. zygote 4. mitochondria

(C) To catch pollen grains from air.

3 (A) 1. (✓) 2. (x) 3. (✓) 4. (x)

- (B) 1. Wave velocity.
2. Light reflection
3. Angle of reflection of light ray
4. Flower.

$$(C) \text{ Wavelength } (\lambda) = \frac{\text{Wave velocity (V)}}{\text{Frequency (F)}} \\ = \frac{1500}{10 \times 10^3} = \frac{3}{20} = 0.15 \text{ m.}$$

4 (A) 1. Tuning fork. 2. A plane mirror.
3. Sparrow. 4. Palm tree.

- (B) 1. b 2. a 3. d 4. c

(C) The ovary will grow into a fruit.

Aswan Governorate

19 Edfu Educational Zone

- 1 (A) 1. Electromagnetic – 3×10^8 m/sec.
 2. transverse – compression
 3. Planck's constant – Photon frequency
 4. Prostate – two cowper's
- (B) 1. Hertz 2. Decibel.
 3. a static cell 4. grafting
- (C) It is the property by which the ears can distinguish between harsh and sharp voices.

- 2 (A) 1. c 2. c 3. c 4. b
- (B) 1. • The odd word is : Motion of rotary bee.
 • The rest words are : Tools that produce oscillatory motion.
2. • The odd word is : White.
 • The rest words are : Spectrum colours.
3. • The odd word is : Tubers.
 • The rest words are : Floral whorls.
4. • The odd word is : Pollination.
 • The rest words are : Ways of artificial vegetative reproduction.
- (C) To attract insects to the flower which help in the sexual reproduction process.

- 3 (A) 1. (✓) 2. (✗) 3. (✗) 4. (✓)
- (B) 1. reciprocal. 2. Sonic waves.
 3. Tissue culture. 4. Estrogen.
- (C) It will germinate forming a pollen tube.

- 4 (A) 1. d 2. c 3. a 4. b
- (B) 1. Regular (uniform) reflection.
 2. The flower. 3. Sound.
 4. Periodic time.
- (C) That is mean the change of light path when it travels from a transparent medium to another transparent medium of different optical density.

South Sinai Governorate

20 Science Inspectorate

- 1 (A) 1. two – amplitude.
 2. electromagnetic – mechanical.
 3. sperm – ovum. 4. Cross – self.

- (B) 1. (✗) 2. (✗) 3. (✓) 4. (✗)
- (C) Frequency (F) =
$$\frac{\text{No. of cycles (d)} \times \text{No. of gear teeth (n)}}{\text{Time in seconds (t)}}$$

$$= \frac{960 \times 30}{2 \times 60} = 240 \text{ Hz.}$$

- 2 (A) 1. • The odd word is : Car movement.
 • The rest words are : Tools that produce oscillatory motion.
2. • The odd word is : Frequency.
 • The rest words are : Factors affecting the sound intensity.
3. • The odd word is : Grafting.
 • The rest words are : Natural vegetative reproduction.
4. • The odd word is : The ovary.
 • The rest words are : Male genital associated glands.
- (B) 1. 300 Hz. 2. Red. 3. bract. 4. one.

- (C) Absolute refractive index of a glass =
$$\frac{\text{The velocity of light through air}}{\text{The velocity of light through glass}}$$

$$1.5 = \frac{3 \times 10^8}{\text{The velocity of light through glass}}$$

 The velocity of light through glass

$$= \frac{3 \times 10^8}{1.5} = 2 \times 10^8 \text{ m/s.}$$

- 3 (A) 1. Harmonic tones.
 2. Angle of refraction.
 3. Epididymis. 4. Wave motion.
- (B) 1. B 2. 60°
 3. 0.8 sec. 4. a sperm.
- (C) Because the ovary of peach contains only one ovule, while that of peas contains many ovules.

- 4 (A) 1. the oscillatory motion.
 2. the longitudinal.
 3. Ultrasonic
 4. potatoes.
- (B) 1. d 2. a 3. b 4. c
- (C) Its speed increases to the maximum value.

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9

